Industrial Equipment News

FOUNDED 1933

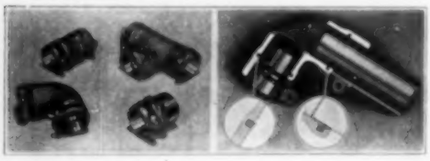
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 7153**

PIPE FITTING . . Stainless steel, seals and clamps on unthreaded pipe

Source: PETER A. FRASSE & CO.
15 Grand St., New York 13, N. Y.



Couplings, tees, elbows, adapters

Schedule 5 stainless steel pipe with wall thickness at 0.065 in. can be employed with this new Cooper Alloy Quikupi fitting in 150-lb. service handling corrosive fluids at temperatures to 275 degrees. The additional wall thickness to 0.113 in. for 1-in. pipe or 0.154 in. for 2-in. pipe on Schedule 40 is not required because there are no pipe threads in the metal.

Pipe cost per foot is thus cut from $1.94 to $1.11 for the 1-in. pipe or from $3.64 to $1.74 for the 2-in. pipe. The new fittings are available for 1 to 4-in. pipe and for the same range of seamless tube. They are cast Type-304 and Type-316 stainless.

A pipe is cut to length, preferably with a wheel-type cutter that will leave a smooth end chamfer, the pipe surface is wiped clean and the pipe is inserted into the fitting. It passes through the clamping end and then through the opening in the lip-type neoprene gasket assembled in a machined groove. A machined shoulder in the fitting limits the inward movement. The stainless-steel cap screw in the clamp is then tightened by an Allen wrench and the connection is complete.

The sealing ring prevents leakage. The clamp holds the pipe in position. Added characteristics include ability to assemble in unusually close quarters because neither the fitting nor the pipe requires turning. No heavy pressures need be applied in assembling the thin wall pipe or tube. Normal diameter variations are compensated for by the ring.

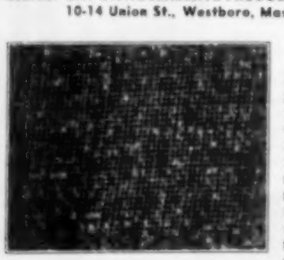
A field test installation that has been in operation for 15 months shows no signs of leakage at any of its 730 fittings in its 1,000 lineal feet of 1 and 1½-in. pipe and tube. This installation is being employed daily to handle corrosive fluids in developing motion-picture film.

The fittings are being manufactured by Cooper Alloy Foundry Company following a period of development in cooperation with the inventor and engineers for Peter A. Frasse & Company. The latter company now carries them in stock in New York, Philadelphia, Buffalo, and Syracuse. Both companies are prepared to assist with piping layout and installation suggestions to take advantage of the considerable potential saving in pipe, installation labor and line maintenance.

If you write maker identify as **IEN - 7154**

ABRASIVE . . Impregnated fabric is open mesh to clear the cuttings

Source: BAY STATE ABRASIVE PRODUCTS CO.
10-14 Union St., Westboro, Mass.



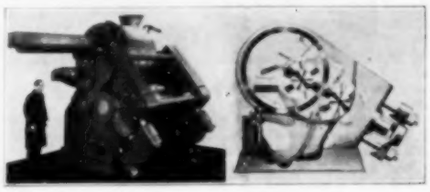
Showing mesh full size

Tough fabric with 24-mesh weave is impregnated with abrasive in this new Griteloth. The fabric holds the abrasive firmly and, at the same time, provides many openings through which cuttings can flow when the cloth is applied in a sanding operation. There is no tendency to clog. Application can be made wet or dry, flat or folded, on sanding machines or by hand. The cloth can be cleaned by rinsing it in water. Available sizes are 3⅞ by 9 in. and 9 by 11 in. in seven grits ranging from 220 to 600.

If you write maker identify as **IEN - 7155**

PROCESSING . . Hydraulic machine extracts fluids and converts products

Source: STACOM INDUSTRIES INC.
29-30 41st Ave., Long Island City 1, N. Y.



Technical data on request

Stacomizer is a new continuous-feed roll-type hydraulic press consisting of three rotating members. One is the power-driven back-up roll. The second is a floating ring and the third is a hydraulically-backed work-roll idler. The floating ring revolves freely between the two rolls. It is as wide as the other rolls and about twice their diameter. Hydraulic pressure can be built up between the rolls to about 500 ton.

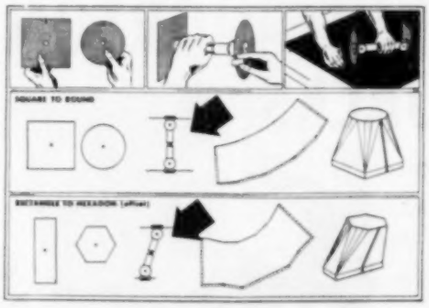
Material to be processed is fed into the lower portion of the floating ring from where it is carried upward by the ring into the horn angle area formed by the outside surface of the work roll and the inside surface of the ring which dips and acts as a lever to force the rolls apart and at the same time opens up the throat of the angle as material feed and pressure conditions change. The resulting action forces the material forward for steady "feed acceptance", breaks it down without any tearing action, separates fluids from solids, fibers from bulk.

Three sizes of machine have been built to date under license by Farrel Birmingham Company. They employ 36, 30 and 8-in. back-up and work rolls measuring 60, 50 and 12 in. in width. Inside diameter of the floating ring is 72, 60 and 16 inches.

If you write maker identify as **IEN - 7156**

LAYOUT . . Adjustable hand tool develops sheet metal fitting pattern

Source: JET TOOL CO.
281-85 Nancy Lane, Dept. I, San Jose, Calif.



List price is $32.50

Make two templates from sheet metal, each duplicating one end of the desired fitting, and clamp them at the ends of new Pattern Duplicator tool. Clamping action is by nuts and studs in the protractor head on each end of the tool. Next arrange the templates at the correct angle and distance from each other. Then "roll," don't slide, the tool over the pattern sheet. Scribe the paths traced by the templates, add flanges where they will be needed, and the pattern is ready to be cut out. The company supplies the tool and instructions. Principal parts are made of aluminum. Minimum length is 8¾ inches. Extension rods can be used for any length desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

JULY, 1952

VOL. 20 No. 7

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES 1*, 6, 51, 56, 64, 70, 94
Adhesives 24*, 31*
Alloys 37, 72
Aluminum 72
Armor, Floor 26
Assembling 105

BALANCING 42, 105
Balls, Metal 42
Barriers, Parking Lot 36
Baskets 50, 114*
Bearings 2, 3, 4, 14, 24*, 25*, 46, 50, 53, 54, 70, 74*, 101* 110
Bellows, Metal 88
BELTS
Conveyor 37, 77
Dressings 15*, 78, 84
Fastenings 23
Transmission 3, 43, 68, 81*, 89
Benches 42*, 109
Bending 6, 9, 24, 29, 33, 50, 63, 81, 87, 101, 110
Bins 19
Blowers 8, 51, 53, 103, 112
Boilers 32, 40*, 54, 71, 94*
BOLTS 10*, 16, 52, 69, 102
Booths, Telephone 66
Boring 48, 58, 73*, 84, 87*
Boxes 6, 30, 44, 57*, 103, 108
Brakes 5, 53, 113*
Brazing 2, 5, 14*, 95, 107*
Broaching 43*
Bronze 72
BRUSHES
Hand 53
Machine 53, 69, 71, 81*
Buckets, Clamshell 69*
Buildings 25*, 48*, 99
Burring 88
BUSHINGS
Drill 33, 40, 96
Sprocket 75

CABINETS 66, 101*
Cable, Electric 3, 15, 71, 83
Calculating 24*
Canvas 46
Capacitors 11*, 44*, 69*
Casters 8, 21, 41, 65, 80
Castings 25*
CEMENT
Iron 20
Portland 3
Centering 85*
CHAIN
Conveyor 14, 111
Fittings 34
Load 67
Transmission 5*, 55, 70
Chairs 97
Chemicals 25*
Chipping 69, 70
Chucks 91*, 105
Circuit Breakers 26
Circuits, Electric 15*
Clamps 8, 45, 58, 79, 92, 94, 95*, 108
CLEANING
Blast 9, 34, 49, 95
Blower 8, 103
Floor 22, 45*, 69
Materials 5*, 11*, 31, 59, 87, 102, 106
Rotary 70
Spray 28, 75*
Tube 69
Vacuum 8, 36, 46*, 65, 72, 103, 113
Vapor 98
Washing 64*, 109*
Clutches 45, 53, 64* 109
Coke Wanted 91
Communicating 44, 66, 90*, 90
Comparators 13
Compressors 20, 35, 41, 76, 82, 105, 112*
Conductors, Electric 3, 15*, 15, 63, 71, 83
CONDUIT 11, 114
Connectors, Electric 39, 74, 84, 86, 96*, 100, 110*
Construction 16*, 69*, 99*, 115*
Contactors 104
Contacts, Electric 81
Containers 83*
CONTROLS
Burner 104*
Die Casting 102
Engine 77
Level 5, 10, 107
Machine Tool 110
Positioning 26*, 98
Pressure 37, 57, 67
Process 87
Temperature 7, 19, 24, 67, 82, 87, 101, 107
Voltage 35, 40
CONVEYING
Ball Transfer 7
Belt 24, 28, 37, 56*, 77, 92, 116
Chain 14, 111
Flight 47
Overhead 40*, 47, 106, 107*
Pneumatic 34
Roller 6, 7, 116
Screw 57
Coolant Equipment 75
Cooling 3, 44, 63, 65*, 115
Corrosion Proofing 28*, 41, 64, 100, 104
Counting 29, 67*, 111
Couplers, Truck 76
Couplings, Shaft 5, 48, 113
COVERS
Dock 17
Guide Pin 56
Cranes 40*, 53, 55, 63*, 67
Crushing 18, 46*, 64
Cushions, Die 85*
CUTTING
Flame 74*
Knife 18, 60*
Tools 24, 34, 42, 50, 112, 113
Wire 48
Cylinders, Power 18, 28*, 56, 64, 81, 92, 108

DEGREASING 98
Deodorizing 10*
Detectors, Fire 87
Die Casting 102
Disinfecting 100
Disintegrating 106
Dispensing 33, 43*, 44, 73
DOORS 20, 60, 71*, 102
Hardware 88
Drafting 67, 97
DRILLING
Attachments 65*
Bushings 33, 40, 96
Chip Breakers 41
Heads 17, 38, 41, 100*
Jigs 94
Machines 101, 112*
Tools 9, 27*, 53*, 55, 83, 116
DRIVES
Adjustable Speed 13, 20*
Components 3*, 3, 5*, 5, 38, 42, 43, 45, 48, 53, 54*, 55, 64*, 68, 70, 72*, 73, 75, 81*, 82, 89, 109, 113*, 113
Speed Reducer 24, 26, 28, 50, 73, 80, 89
Variable Speed 6*, 22, 54*, 73, 106, 111*
Drying 18*, 35*, 39, 92
DUCT
Electric 15
Ventilating 108
Dust Collecting 7*, 14, 23, 25, 44, 59, 102

EARTH DRILLING 115*
Electrical Products 24, 78
Elevators 8*
8, 14*, 29, 75*, 89, 91*, 101
Engines 23, 51, 72
Engraving 49*, 89
Equipment 28*
Expanding 69
Extinguishing 2, 21*, 61
Extracting 106

FABRICATING 3*, 28*, 62
Fabrics 46
Fan Blades 22
Fans 29*, 50, 53, 57, 73, 107, 116
Fastenings 9, 10*, 10, 16, 32, 50, 52, 54*, 61*, 65, 69, 73*, 75, 77, 80, 88, 96, 102, 107, 112*
Feeding 11, 24, 65*, 66, 105, 108
Fence 19, 98
Filing 50
Filling 111
FILTERING
Air 4, 7*
Liquid 7*, 12, 20*, 75
Flexible Shaft Equipment 38, 100
Floats 78
Floors 3, 5, 7, 26, 28*, 42, 55, 71, 99, 101, 115, 116
Flux Collecting 32
Forming 10, 63, 81
Fountains, Drinking 44
Freezers 43
FURNACES 42*, 69
Furniture 42*, 66, 93*, 97, 109
Fuses 82

GAGES
Dimensional 13, 30*, 40, 59, 63*, 93, 95
Level 54, 114*
Line 26
Pressure 9*, 32, 94, 109
Strain 49
Tension 18
Gear Cutting 30*
Gears 38, 89

Reader Service Form 16, 100
Useful Information 24
New Literature 76
Ideas For You 58
"I Wish I Had" 116

GENERATORS
Electric 78
Steam 32, 40*, 54, 71, 94*
Glass Parts 58
Gloves 15, 33*, 49, 52, 109
Goggles 14, 15*, 43, 53
Governors 17
Grabs 8, 86
Grating, Floor 7, 42
GRINDING
Attachments 16, 48*, 66, 97
Belts 56, 64
Machines 38, 41*, 55, 67*, 82, 91, 100, 112
Spindles 74
Tools 29, 55, 77
Wheel Dressers 25
Wheels 31*, 45*, 45, 46, 79*, 79, 97
Guides, Tap 34

HAMMERS 7, 11*, 55, 69, 103
Handles 30
Handling 6, 8, 16, 19, 22*, 30, 38, 44, 45*, 49, 50, 57*, 67, 70*, 70, 83*, 86, 97, 103, 107, 108, 112*, 114*
Hard Facing 89
Hardware 63
HEADS
Drill 17, 38, 41, 100*
Tapping 22*, 38, 41
HEATING
Elements 2*, 5, 16, 63, 74, 92, 110
Furnace 42*
High Frequency 5
Liquid 11, 110
Process 30*
Space 18, 39, 51*, 59, 103
Hinges 12
Hoists 43, 47, 53, 66*, 67, 84, 108*
Holders, Tool 34
Honing 16*
Hooks 34
Hoppers 59, 105
HOSE 54
Fittings 4, 44, 58, 79, 95*, 109, 113
Metal 30, 36
Humidifying 17*

IDLERS, CONVEYOR 28
Impregnating 83
INDICATORS
Flow 115
Leak 69*
Level 5, 10, 114*
Inks 6, 17, 80
Inspecting 30*, 55*
INSULATING
Electric 7, 53*, 60, 104, 105*, 113
Thermal 17, 54, 100
Isolating, Vibration 12, 61, 105

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* _____
- ☐ *Production, Mr.* _____
- ☐ *Engineering, Mr.* _____
- ☐ *Product Design, Mr.* _____
- ☐ *Purchasing, Mr.* _____
- ☐ _____

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ROLLING
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SHEARING
SHEETS
SPRINGS
STEELS
TABLES
TAPPING
TESTING
THREADING
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TRUCKS
TUBES
UNIONS, PIPE 42
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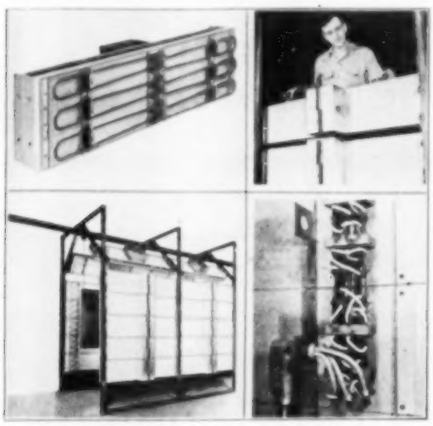
If you write maker identify as **IEN - 7157**

HEATING . . Electric element in panel assembly for infrared uses

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.



Illustrated details in Bulletin CS-605

New panel design has been added by the company to its line of Far-Infrared electric heating equipment, previously described IEN-8026-48. The new panels are available in 1 by 4-ft. and 2 by 4-ft. face dimensions with output capacities at 10.8 and 21.6 kilowatts or the equivalent of 9,200 btu. per square foot per hour. The panels can be assembled into ovens of any required length, width or height. They can be put together quickly or taken apart and reassembled to meet changing work requirements. Panel weight is 14 lb. per square foot.

Chief characteristic of the new panels, as well as the original aluminum-reflector assembly, lies in the heat radiation in which visible light is negligible and there is a preponderance of the long wave lengths in the infrared band. These are capable of penetrating and heating light-colored and transparent materials as well as those that are dark and opaque.

Supplementing this characteristic is the unbreakable design of the metal electric element and the insulated steel reflector-equipped mounting panel with its built-in bus bars and thermal insulation arranged with air spaces between the insulation layers. These spaces can be employed for circulation and also for preheating purposes as well as to keep the panels cool on the outside.

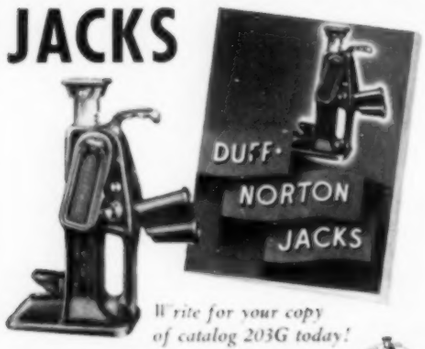
The elements operate at 1,000 to 1,400 deg. F. to provide work temperature to 700 deg. F. Dial-type control provides for output adjustment between 4 and 100 per cent of capacity. Bus-bar rating is 100 amp. per line for single or three-phase input to 575 volts in standard design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7158**

For all heavy lifting • lowering • pushing • pulling

DUFF-NORTON JACKS



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Considering the big part ball bearings must play in the efficient operation of your machine, it is important for you to *know*, in *advance*, how the bearings will perform.

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• New Kidde 5 pound Dry Chemical Fire Extinguisher can be *recharged with air* at any air pump. It has more fire-killing action than any unit of its size.

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Walter Kidde & Company, Inc.
736 Main St., Belleville 9, N. J.

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Because this low-temperature silver brazing alloy just naturally makes joints that have all three properties — and does it fast and economically —hundreds of manufacturers in the refrigeration, air conditioning and heating industries braze with EASY-FLO. The RUUD water heater is typical. Copper finned tubes are joined to bronze headers, and copper tubes to manifolds and to copper jacket — all with EASY-FLO.

BULLETIN 20

tells you what EASY-FLO is, what it does and how to use it — plus valuable info on fast brazing production. Write for a copy today.

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If you write maker identify as IEN - 7162

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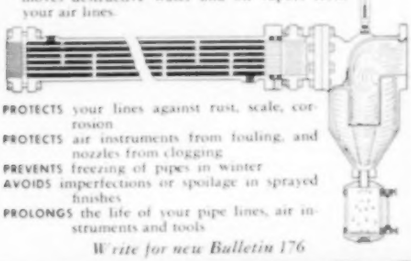
with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 7163

securityflex* saves money...

and because of its strength, toughness, and wear-resistant properties, this heavy-duty portable cord needs fewer replacements—lowers maintenance costs.

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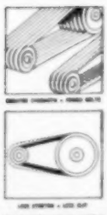
the right cable for the job

ANACONDA® wire and cable

If you write maker identify as IEN - 7164

BROWNING STEEL CABLE GRIPBELTS

MORE Strength • LESS Stretch



Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

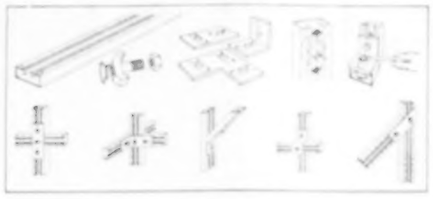
Write FOR LIST PRICE SHEET V-163-A

BROWNING MANUFACTURING CO. INCORPORATED MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 7165

FABRICATING . . Formed channel, spring bolt and connector fittings

Source: AINSWORTH MFG. CORP. 2202 Franklin St., Detroit 7, Mich.



Ask for illustrated bulletin, "Hold Everything"

Mult-A-Frame trade names a new assembly of three standardized components with which to build structures of practically unlimited outline, size, load capacity and purpose. Assemblies can be made to fit a given need and then taken apart and reassembled to meet new requirements. A stock of the components can be held in storage, used as required and then returned to storage. A metal-cutting saw and a wrench are the only tools required.

The steel channel is made in several sizes, two examples of which are No. 3100 or 0.06-in. cold-rolled steel with section dimensions at 1⅝ by 1⅞ in. and No. 5100 of 0.080-in. steel measuring 1¾ in. in square cross-section. Each has a ⅛-in. continuous slot in one face, turned-in flanges on the sides of the slot, longitudinal serrations on the two sides of the slot and dot markers indicating inches and feet.

The Spring-T-bolt is a one-piece cold forging with a rectangular head that will enter the ⅛-in. slot. A spring is mounted in the head. The bolt is pressed into place against spring action and then is turned 90 deg. and released so the spring can hold the T-head against the channel face from inside. Locating teeth in the head engage the serrations in the channel. The bolt will hold in this position while parts are being assembled and a nut tightened.

The connector fittings are made of $\frac{3}{16}$-in. steel plate the same width as the channel face. Each fitting carries embossed keys to engage the channel slot. A practically unlimited variety of shapes, sizes and styles is available.

If you write maker identify as IEN - 7166

DRIVE . . Universal joint with hubs measuring 6 in. in diameter

Source: CURTIS UNIVERSAL JOINT CO. 2-6 Birnie Ave., Springfield 7, Mass.

For rolling mills

The forks in this new universal joint are made of cast alloy steel. Pins and blocks are cold drawn alloy steel. All of the parts are heat treated and ground. The hubs are machined to specification. The new unit is available in single-joint assembly to measure 15½ in. in length and in double-joint assembly to measure 25 inches. Weights are 98 and 155 lb. respectively. The assembly is locked by a small threaded pin and locknut. They can be removed but will not loosen alone.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7167

SAFETY EQUIPMENT FOR ALL INDUSTRIES

"FLUD-LITE" MAGNIFIER

Fluorescent Lighting for INSPECTORS ASSEMBLY WORKERS TOOLMAKERS MACHINISTS And Others Engaged In Close Work

Floodlights the work area with scientifically focused, shadow-free fluorescent light, magnifying the work through a high quality 5" diameter lens with a focal distance of 13". Magnification two to one. Also available with auxiliary lens providing four to one magnification.

WRITE FOR BULLETIN NO. 58

IPCO Safety Equipment for all Industries

INDUSTRIAL PRODUCTS COMPANY

2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 7168

LUBRICATION ECONOMY

"LUBRIPLATE Prevented Parts Replacements and Tie-ups"

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1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
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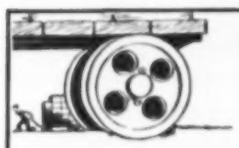
DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 7169



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

If you write maker identify as IEN - 7170

There's a NORMA-HOFFMANN PRECISION BEARING designed to Exactly Fit the Application

No matter what your bearing requirements . . . for electric motors, machine tools, household appliances, etc . . . Norma-Hoffmann can give you the *right* bearing to meet *your* particular application. These precision bearings will improve your product performance with efficient friction-free operation. Their ability to operate dependably under the toughest going means you have less maintenance problems. They are available in a wide range of types and sizes from ⅜" to 22½" bore, also metric. Write for catalog.

NORMA-HOFFMANN Precision BEARINGS BALL • ROLLER • THRUST

NORMA-HOFFMAN BEARINGS CORP., Stamford, Conn.

If you write maker identify as IEN-7171

Effective even where other lubricants have failed

Moly-sulfide

A LITTLE DOES A LOT

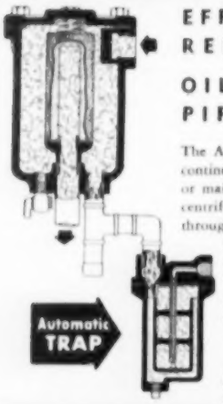
Moly-sulfide, a solid film lubricant, stands out most where the lubricating conditions are the most difficult. If you have to contend with extreme conditions of pressure, temperature, fretting, or velocity, you should try *Moly-sulfide*. First write for a copy of this free 40-page booklet which shows where the above conditions have already been overcome in the shop and in the field.

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N·Y

MS. 7

If you write maker identify as IEN-7172

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES

OIL, WATER
PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

Write for complete data Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN-7173

FOR BETTER CONTROL IN THE TIGHT SPOTS

CRANE IRON BODY CLAMP GATE VALVES

Here's an inexpensive, versatile gate valve with a special talent for tight places. It's unusually compact and extra sturdy. You can use it for steam, hot and cold water, for crude, fuel and lubricating oils, and for gas and gasoline services. All-iron inside screw valves have one-piece, free-draining bonnet. Ideal for handling heavy, sticky fluids. For inspection or cleanout, the bonnet assembly and wedge disc lift out easily—the body stays in the line. And you'll have no trouble in reassembling—the bonnet joint always makes up tight and stays tight.

Send for Folder AD 1667 or ask your Crane Representative for full details.

Crane Wedge Disc Clamp Gate Valves come in OS&Y, inside screw, and quick-opening patterns, all-iron or brass trimmed. Sizes up to 4 in. Working pressures up to 150 psi saturated steam.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

PUBLISHED BY THOMAS PUBLISHING COMPANY

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THOMAS PUBLISHING COMPANY
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Vol. 20 JULY, 1952 No. 7

One Ingredient

Last month the industrial advertising men gathered in Chicago. There they held their 30th annual conference of the National Industrial Advertisers Association. We hope your advertising manager was there, if your markets lie in the industrial field. We believe you have vital interest in the subject, however, no matter where you sell the things you make.

Subjects in which you were the principal object for discussion and study all revolved around new ways to start you ticking when you read the advertisements in your favorite industrial publications and lead you to ring the inquiry bell when you come to the action part of the advertising copy. Many and varied are the rules for approach and lead-in and carry-through to win your attention, enlist your interest, guide you along to read in designated channels, minimize eye strain as you approach the final "punch line".

These rules, carefully thought out, expertly sequenced, are revised and improved at each annual conference. Collectively they add up to favorable understanding, if not actual purchase, of the advertised products depending on just one additional ingredient. That ingredient is true merit in the individual product, something that stands it out on its own and thereby makes it desirable. It is an interesting fact that right there is where you come in with full responsibility.

The advertising manager can devise new ways to present the information. He must look to you who design and manufacture for the product itself and also to you for the factual information that will point clearly to where the merit lies. This condition applies to any product, industrial or not. You can prove it for yourself if you will make a simple test.

Select just one of the products you make, any one. Assemble all of the information you possess on every possible angle. Pay particular attention to the product's position in the market as compared to its competition. Assess its future prospects in view of new products that could replace it. Look at your methods of manufacture, the materials you are using, your plans for improvement or expansion.

Give all these data to your advertising manager. Go over the material with him. Explain it point by point. Invite him to ask questions. Then "sell" him the idea of writing an advertisement, just one, based on this new information. Check the information yourself while he is writing his copy to see where you could make further product improvement, perhaps in the very near future.

Read the advertisement he writes. Compare it with the copy he was producing before you gave him the information. We know he will be enthusiastic. We believe you will see a marked difference, thanks to your help. We predict product improvement on your part resulting from your own "sales wise" investigation.

Recently we heard an advertising statement over our television concerning a certain cigarette. Evidently that advertising manager had no help from his engineers when he wrote, "A certain ingredient, a source for irritation in all other cigarettes is not used in Nicotina cigarettes". The only ingredient we can think of that is common to all cigarettes is tobacco.

W. E. Irish.

If you write maker identify as IEN-7174

LOW COST, ORGANIZED STORAGE SPACE

32-DRAWER (96 COMPARTMENTS) Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32

$11.95 F.O.B. AKRON

15⅝" high
6" deep
12½" wide

HUNDREDS OF USES:

Useful in every shop, lab, office, stockroom, store, home, assembly line . . . . in radio, TV, photographic and aircraft work.

Orderly storage for small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identify card drops into slot on drawer front.

Made in 7 sizes:

J-64	64 drawer	(192 compartments)	$22.95
J-48	48 drawer	(144 compartments)	18.75
J-32	32 drawer	(96 compartments)	11.95
J-24	24 drawer	(72 compartments)	9.95
J-16	16 drawer	(48 compartments)	6.95
J-12	12 drawer	(36 compartments)	5.25
J-8	8 drawer	(24 compartments)	3.95
AK-6	Adapter Kit for dividing 8 drawers LENGTHWISE (crosswise dividers FREE with each cabinet)		3.95

SEND FOR FREE DESCRIPTIVE FOLDER

AKRO MILS, INC. P.O. BOX 989 AKRON 9, OHIO

If you write maker identify as IEN-7175

SEALMASTER BALL BEARING UNITS

3 Points of *Superiority*

1 PERMANENTLY SEALED—Felt-lined steel flinger rotating in labyrinth keeps out dirt and keeps in proper amount of lubricant.

2 SELF-ALIGNING—Bearing unit, with seals independent of housing, can align itself in any direction without seal distortion.

3 PRE-LUBRICATED—Proper amount of grease is put in bearing chamber before it leaves the factory.

- Flange Units
- Pillow Blocks
- Take-Up Units
- Cartridge Units
- Hanger Units

Write for catalog 845

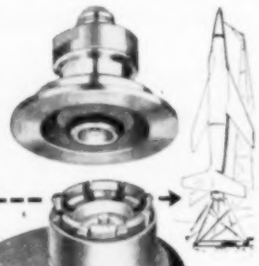
BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · Variable Speed Reducers · Sacs Speed Reducers · SealMaster Ball Bearings

231 RIDGEWAY AVE., AURORA, ILL.

If you write maker identify as IEN-7176

good hunting begins *here*



Good hunting with missiles begins with accurate launching. To overcome unpredictable performance of some connectors, Wiggins designed this solenoid actuated, leakproof coupling. It can be actuated by electric, hydraulic or pneumatic controls and has performed unfailingly for more than one year.

OPERATION—Both halves self sealing; nipple goes with missile, mating half remains on ground. MATERIAL—Aluminum alloy. LINE SIZES—⅜", ½", ⅝" in production. Write for engineering and performance data.

Wiggins
Aircraft Division
E. B. WIGGINS OIL TOOL CO. Inc.
3424 E. Olympic Blvd., Los Angeles 23

INST-O-MATIC COUPLINGS

If you write maker identify as IEN-7177

STOP VIBRATION.....

2 WAYS WITH... LOVEJOY FLEXIBLE COUPLINGS

By use of special cushion materials, Lovejoy Flexible Couplings stop vibration due to misalignment of shafts *and* vibration inherent in either connected machine! Shock, backlash and surge are also absorbed — instantly and permanently. No shutdowns for changing cushions, which are available for every service . . . 1/6 to 2500 H. P. No lubrication ever needed.

Write for catalog and Quick-Finding Selector Charts

LOVEJOY FLEXIBLE COUPLING CO.
5014 W. LAKE STREET CHICAGO 44, ILLINOIS
Also Mfrs. of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

If you write maker identify as IEN-7178

SAVE TIME... STORAGE SPACE ...AND AVOID SPILLAGE

with TELLEVEL AUTOMATIC BIN-LEVEL CONTROL

Let TELLEVELS watch your bin-level for you . . . Avoid empty or overflowing storage bins.

Mount a TELLEVEL near the top and another near the bottom of your storage bin As the material-level falls or rises, the light pendant is pushed aside . . . Automatically *starts or stops* conveyor, elevator or pump . . . Can be furnished for bulk materials or liquids.

Check possible uses. Write now for Bulletin No. 440.

STEPHEN S-ADAMSON MFG. CO.
Tellevel-Bin Level Controls · Sace Speed Reducers · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings
231 RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as IEN-7179

Found!

A FLOOR THAT TAKES THE POUND...POUND...POUND!

PABCO MASTIPAVE

AMERICA'S NO. 1 LOW-COST LONG-LIFE FLOOR COVERING

"After years of using Pabco Mastipave throughout our large production plant on cement and wood floors, we have found it to be a most practical floor covering for heavy duty usage," says Bruce E. Merritt, Purchasing Agent, Charles R. Hadley Company, printers and publishers.

"We have greatly decreased accident hazards by placing Mastipave on stairways. Mastipave withstands heavy trucking, and is easy to maintain."

TILE

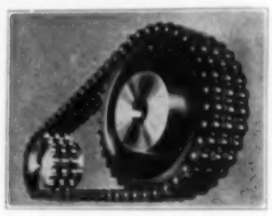
SEND NOW FOR THE FULL STORY OF MASTIPAVE!

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)
GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."
NAME
ADDRESS
CITY STATE

If you write maker identify as IEN-7180

DRIVE . . Roller chain with oil impregnated roller bushings

Source: WHITNEY CHAIN CO.
235-9 Hamilton St., Hartford 2, Conn.



Runs clean, no drip

Sintered bushing is a new design in the company's line of roller type transmission chain in which the roller bushings are made of sintered metal oil impregnated. As a result the chain needs little or no lubrication in service, a fact that suits it for drives where lubricant can not be allowed to drip and in installations where atmospheric dust would be attracted if the chain were lubricated in the field.

A 20-hour test of a standard roller chain and the new prelubricated design, in duplicate size and under duplicate conditions, resulted in wear or elongation of 0.380 in. for the standard chain and 0.080 in. for the prelubricated design.

The chain is available at present in American Standard No. 50, ⅝-in. pitch, in limited quantities. This will be followed during the coming months by American Standard Nos. 35 and 40, ⅜ and ½-in. pitch respectively.

If you write maker identify as IEN-7181

CLEANING . . Hand cream for use on worker's hands and arms

Source: A. C. DAVENPORT & SON
309 N. DesPlaines St., Chicago 6, Ill.

Packaged in pints, quarts and gallons

A small quantity of this new WIX cream is removed from its container and is rubbed between the palms until it liquefies. Then it is spread over the skin to emulsify dirt and grime, leaving them loose to wipe off with a dry cloth. The cleaner contains lanolin. It will remove paint, grease, tar, compounds, ink and similar materials.

If you write maker identify as IEN-7182

NIBBLING . . Reciprocating head mounts on portable tool to cut sheet

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.

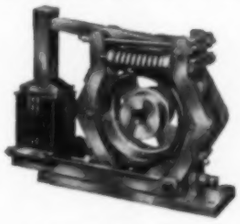
Works with ¼ in. tool

Thin sheets of steel, brass, copper, fiber, to 19 gage based on steel, can be cut by this new nibbler attachment for a portable electric tool. A reciprocating punch operates in connection with a die. The two ride on opposite sides of the sheet to nibble out a slot ⅛ in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-7183

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SB-373 SHOE BRAKE
10" WHEEL, 5" Face, 450 FT.-LBS.

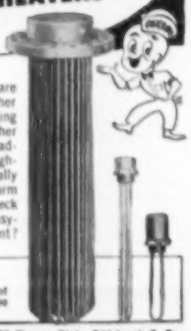
SB-300 LINE OF BRAKES
TORQUE CAPACITY 3 to 24,000 FT.-LBS.

AVAILABLE IN SPRING SET OR MAGNETICALLY SET WITH OIL IMMERSED AND EXPLOSION PROOF SOLENOIDS

EIGHT LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

If you write maker identify as IEN-7184

HEAT GASES and LIQUIDS Efficiently and Economically with CHROMALOX Heavy-Duty IMMERSION HEATERS



CHROMALOX Electric Immersion Heaters are suitable for heating compressed air and other gases; for super-heating steam; for heating liquids and Dowtherm, Arochlor and other heat-transfer mediums. Heaters can be readily applied to high-temperature and high-pressure operations; when thermostatically controlled, accurate temperature and uniform product controls are possible. Why not check the advantages you can gain by using easy-to-install CHROMALOX Units in your plant?

Get the Booklet
"A to Z with ELECTRIC HEAT"
It contains actual application photographs of electric heaters at work in plants throughout the country. No obligation.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Circulation Heaters Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-7185

YOU CAN TELL AT A GLANCE WITH QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order.

QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy—they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

WRITE FOR FREE SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES
MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
1621 S. SPRING STREET • CHIPPEWA FALLS, WIS.

If you write maker identify as IEN-7186

RATE: 440 TUBES PER HOUR
COST: 1/10c PER JOINT

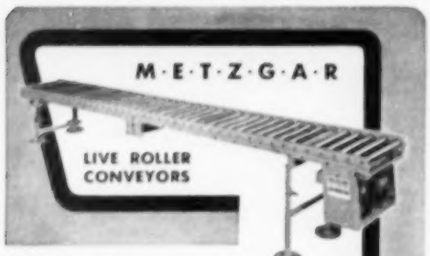
WHEN YOU CAN do it so fast and cheap, why braze the slow ways? Tubes are heated in fixture — four at a time. Transfer switch arrangement permits loading one fixture while other four tubes are being heated, so that duty cycle of almost 100 percent is maintained. Reject rate is low; scaling is minimized; cost is low.

Whether your problem is brazing or soldering, hardening or annealing, see what A-C Induction Heaters can do for your costs. Call your nearby Allis-Chalmers district office, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-2771

ALLIS-CHALMERS

If you write make identify as IEN - 7187



HORIZONTAL POWER . . .

. . . where Belt Surface Conveyors can't stand abuse of heavy metals, sharp corners or rough edges. Metzgar "Live Roller" units provide an all-metal, powered bearing surface. May be used as power booster in gravity line. Work can be slowed or held without stopping machine.

Furnished portable or permanent mounted. Choice of one to five rollers per foot. Lengths to suit. Ball bearing throughout. Gearmotor AC or DC drive.

4 STOCK SIZES 11½" - 15" 18" - 24" WIDTHS

ASK FOR FOLDER NO. 1249

METZGAR CO. METZGAR

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END-WOOD WHEELS.

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

If you write make identify as IEN - 7188

New Twin Coaches use lighter gauge metal with 3-dimensional RIGID-TEX METALS

RIGID-TEX METAL wall plates installed in new coaches conceal drafts, weather and other road damage for lowered maintenance. Pattern S-WL above.

• The Twin Coach Co., Kent, Ohio, installed design-strengthened RIGID-TEX METAL in one of their newest coach designs because "lighter gauge material can be used with RIGID-TEX METAL construction and with the RIGID-TEX METAL wall plates it is not necessary to either prime or paint them. On the basis of this experience . . . we are figuring on other uses for this type of material which might produce *equally attractive savings*."

This is but one of the many companies who are finding maintenance-saving, materials-saving uses for this high-strength, light-weight metal. Variety of pattern designs available in all ferrous and non-ferrous metals—solid or perforated—sheet or strip. Investigate the value of RIGID-TEX METALS for your company . . . today.

WRITE TODAY for complete literature and ideas on how YOU can profit with three-dimensional design-strengthened RIGID-TEX METALS.

U. S. & Foreign Patents

Rigidized Metals Corporation

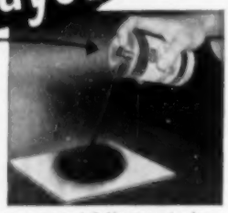
6647 OHIO STREET BUFFALO 3, N. Y.

Offices in Principal Cities in the U. S. and Canada

CABLE ADDRESS: "RIGIDIZED"

If you write make identify as IEN - 7189

Now Spray On design layout ink



"JUST PRESS THE BUTTON ON THE CAN"

Faster! Easier!

No brush, no waste, no mess! Self-pressurized can sprays on CROWN Design Layout Ink in fine mist that dries to hard surface in a minute. Dark blue is standard—other colors on volume purchases.

ORDER TODAY!

$1.59 PER 12-OZ. CAN

15% discount in cases of 12

Additional discount for larger quantities

FOB Sycamore Illinois

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Ave., Sycamore, Ill.

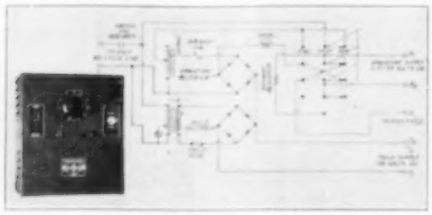
Please ship at once
_____ (how many?) cans
_____ (how many?) cases
CROWN Design Layout Ink

Name_____
Company_____
Our Purchase Order No._____
Address_____
City_____ Zone____ State_____

If you write make identify as IEN - 7190

DRIVE . . Variable speed control for ¾ hp. dc. motor from an ac. line

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



Lists at $230 without the motor

Instant starting, quick frequent reversal and ability to start or reverse under heavy load characterize this new Type 1702-A variable speed control in the company's Variac line. The new unit is designed for operation with a ¾-hp. compound-wound motor. It is further development of the ½-hp. equipment, previously described IEN-9004-51.

Construction includes dynamic braking, speed range from that rated for the motor down to zero at constant torque, magnetic circuit-breaker overload protection, a manually operated start-stop reverse switch, assembly in a metal housing that measures 13 by 15 by 5¼ inches.

Normal operation is on 110-volt 60-cycle ac. An auto-transformer can be supplied for input from a 220-volt circuit. This transformer lists at $27.50. A ¾ hp. motor suitable for use with the control also is available at a list price of $81.

If you write make identify as IEN - 7191

PAINTING . . Aluminum, to spray, will not spatter surfaces in background

Source: ROYSTON LABORATORIES INC.
1950 First St., Blawnox, Pa.

Overspray dries in air

Roylac Aluminum is a new industrial paint for spray application in locations where spatter on surrounding surfaces must be prevented. The wire fence shown in the illustration is an example. The vehicle and the solvents used in the formula result in the paint spray drying to a cottony non-adhering powder after traveling in a distance of four feet from the gun nozzle. There was no sign on the grass along the fence that the fence had been painted a day after the job was done.

Application can be made on aluminum, magnesium, steel, galvanized surfaces, wood and other non-metallic materials. It seals the pores, produces a tightly bonded corrosion resistant film with a bright finish. It is not affected by contact with acid fumes, salt spray, moist air. Coverage is 600 to 800 sq. ft. per gal., dries tack free in twelve minutes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 7192

Truscon Steel Boxes and Skids

The BIG NAME for the BEST SERVICE

Truscon has scores of different types of steel boxes and skids to meet a wide range of materials handling requirements. And if your needs are something special, Truscon has the engineering ability to tailor-make the exact units you require. Truscon's long experience in steel box and skid design . . . Truscon's highly efficient facilities for production and service . . . Truscon's long association with box users in every branch of materials handling . . . these are *plus* features that make your dollar investment in Truscon Steel Boxes and Skids so much more profitable. Write for catalog showing wide range of Truscon Boxes available, and ask for an experienced Truscon man to help plan your needs efficiently.

TYPE PB-650

TYPE PB-160

TYPE PB-120-FHR

TRUSCON a name you can build on

TRUSCON STEEL COMPANY

Pressed Steel Division • 6200 Truscon Ave., Cleveland 4, Ohio

Subsidiary of Republic Steel Corporation

If you write make identify as IEN - 7193

rapidly duplicated with

di-acro HYDRA-POWER BENDER

An example of large radius forming.

At last — a PRODUCTION BENDER that "BENDS THEM ALL" —tubing — angle — channel—extrusions—moulding — strip stock — bus bars—and of course, all types of solid materials. U-Bolts and Eye-Bolts are just two examples of the shapes that can be rapidly produced in one operation with this hydraulic power bender.

The DI-ACRO HYDRA-POWER BENDER can be easily set up in your own plant for a great variety of forming operations, or it can be delivered completely tooled for speedy production of a specialized part. Investigate this universal machine before you buy any "single purpose" bender.

Send for

"DIE-LESS DUPLICATING" CATALOG

giving full information on all DI-ACRO Benders, Brakes, Shears, Rod Parters, Notchers, Punches—also our offer of free DI-ACRO Engineering Service.

DI-ACRO is pronounced "DIE-ACK-RO"

di-ACRO O'NEIL-IRWIN MFG. CO.

318 8th Avenue, Lake City, Minnesota

If you write make identify as IEN - 7194

Cut Polishing Time Improve Surface Quality

with "LINDE" FINE ALUMINA POWDERS

Obtain superior finishes, free from microscopic pits and scratches in a fraction of the usual polishing time. Use less abrasive and use it directly without levigation and other wasteful preparatory steps. They can also be compounded with waxes and used in stick form.

LINDE Fine Alumina Powders are characterized by ultra-fine, uniform particle size, high purity, and swift polishing action. They have gained wide-spread acceptance in polishing materials ranging from metallographic specimens to gemstones and noble metals.

Call or write any LINDE office and we will be glad to discuss your particular polishing applications.

	Type A	Type B
Chemical Composition	Alpha Al_2O_3	Gamma Al_2O_3
Particle Size (approximate)	0.3 Microns	Less than 0.1 Microns
Hardness (Moh's) (Equivalent to crystalline material)	9	8
Crystalline Structure	Hexagonal	Cubic

The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY

A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

30 East 42nd Street, New York 17, N. Y. UCC Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

If you write make identify as IEN - 7195

Here is a BETTER Strainer to "police your pipelines"

• **FIRST**—*The Screen,* a high-grade, woven Monel wire basket that catches solids—lets condensate, oil or other fluids flow freely.

• **SECOND**—*Finish.* Cadmium plated inside and out for protection against corrosion.

• **THIRD**—*Easily Cleaned.* Blow-off bushing made for easy removal. Bushing and Screen come out together. Screen automatically aligns on reassembly.

• **THOUSANDS IN SERVICE**—Sold by over 200 Mill Supply Houses. 6 sizes from ½" to 2" for pressures up to 600 lb. Reasonably priced.

See your supply house or write for Bulletin S-203.

YARNALL-WARING COMPANY

122 Mermaid Ave., PHILADELPHIA 18, PA.

YARWAY STRAINERS

If you write maker identify as IEN-7196

WEATHERPROOF TAPE replaces outdoor paint

Appleton Neon Sign Co., Wisconsin, solved a costly maintenance problem by blacking out non-illuminated sections of neon tubes with Polyken waterproof tape No. 214 instead of paint, which weathered off. In the picture above, the sections have already been blacked out with No. 214, and a worker is shown using another Polyken tape, exclusive polyethylene No. 822, to splice electrodes that will carry over 6,000 volts.

Write Polyken, Dept. IEG, 222 W. Adams St., Chicago 6, Ill., for free booklet, "Tape is a Tool."

Polyken®

INDUSTRIAL TAPES

Polyken Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

If you write maker identify as IEN-7197

New Safety! New Efficiency!

for ANY PULLING... PUSHING... LIFTING JOB

with the right SIMPLEX HYDRAULIC EQUIPMENT

Re-Mo-Trol PULLERS

Hydraulic Pumps and remote-controlled Rams for pulling wheels, gears, shafts, etc., also pushing and lifting in any direction from a distance. Safe, smooth, powerful. 10 to 100 ton capacity units. Unique Center-Hole simplifies rigging.

SIMPLEX JENNY

Self-contained Hydraulic Pullers with famous Center-Hole for easy pulling, pushing, lifting. Rugged, versatile; 6 models, 30 to 100 ton capacities.

SIMPLEX HYDRAULIC JACKS

Sturdy, safe, efficient units to do any lifting job easy and fast. 8 models, 3 to 100 ton capacities. Also 18 and 25 ton models with toe lifts.

Get full information on the most complete industrial line of Hydraulic Jacking equipment; write for Bulletin: Hydraulic 51R.

Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
1012 South Central Ave., Chicago 44, Ill.

If you write maker identify as IEN-7198

PICK THE CORRECT HAMMER FOR EVERY STEEL STAMP, CHISEL, STAR DRILL, OR SLEDGING APPLICATION

Mecco SAFETY ENGINEERS' HAMMERS "STYLE OE"

To minimize spalling and mushrooming, "Style OE" Hammers are machined of Mecco Safety Steel, carefully heat treated in sizes to meet your needs. Available in the right weight for every application.

Write for complete data

M.E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

1039 Chateau Street • Pittsburgh 33, Pa.

If you write maker identify as IEN-7199

FILTERING . . Monel Metal element removes solid matter from water line

Source: MARVEL ENGINEERING CO.
623-27 W. Jackson Blvd., Chicago 6, Ill.

"You asked for it"

The company announces new design of its Symbiinal filters, previously developed for hydraulic and low-pressure oil lines, to apply in water lines for removal of solid matter. A pipe line design as shown in the illustration is available with capacities from 5 to 50 gpm. A sump type unit ranges from 5 to 100 gpm. Mesh size in the Monel Metal screen ranges from 30 to 200. Basic design of the filter assembly has not been changed. Both designs can be taken apart, cleaned and reassembled without disturbing the flow connections.

If you write maker identify as IEN-7200

PAINTING . . Protective coating for surfaces subject to 1,600 deg. F.

Source: SHEFFIELD BRONZE PAINT CORP.
17812-16 Waterloo Road, Cleveland 19, Ohio

For ovens, flues and furnaces

Super-Hot Aluminum represents further development of the company's Red Hot ready mixed paint for application on metal surfaces subject to elevated temperatures between 500 and 1,000 deg. F. The new paint adds a protective and decorative finish. It bonds tightly to the surface and will not crack, chip or peel. It is not subject to attack by ordinary solvents.

Application is brushing, spraying or dipping to air dry in about 30 minutes prior to subjecting the surface to heat. Best results are obtained on clean, dry surfaces, but the paint can be used on metal that is rusty, moderately greasy or oily.

If you write maker identify as IEN-7201

DUST COLLECTING . . Filter panel traps microscopic particles from air

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

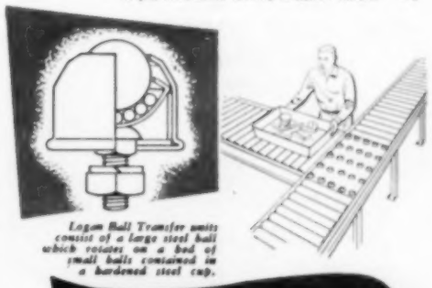
No dust can pass

Ultra-Aire trade names a new filter panel capable of stopping airborne toxic and radioactive dusts, bacterial organisms, oxides of beryllium. It will hold particles as small as 0.3 micron, as finely divided as tobacco smoke. It was initially developed to remove radioactive contamination from air exhausted during atomic-energy plant operations.

Three sizes rate 50, 500 and 1,000 cfm. The largest measures 24 by 24 by 11½ in. and presents 32 sq. ft. of filter area. Service life under normal conditions, when protected by a roughing filter, is about 1½ years.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 98

If you write maker identify as IEN-7202



Logan Ball Transfer units consist of a large steel ball which rotates on a bed of small balls contained in a hardened steel cup.

BALL TRANSFERS

Logan Ball Transfers are handling equipment, designed primarily for use in transferring at right angles or where it is desired to rotate packages without lifting. Can be adapted to other applications. You can buy separate ball assemblies from stock or complete tables made-to-order.

Logan offers Ball Transfer units in several different sizes.

Further information on request.

Ball Pedestal units also available for handling sheets and plates.

Logan Conveyors

LOGAN CO., 274 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN-7203

Thermohm electric resistance thermometer used with Electromax Controller

This Electromax Controller provides modern *electronic* regulation for temperatures of ovens, furnaces, kettles, tanks, etc. Type of regulation can be either on-off or proportional, yet the instrument is the acme of dependable simplicity. Being a resistance bridge, it needs no standard cell; has only one moving part; is not affected by tremors or vibration; usually needs no attention for months at a time. For details, write us at our nearest office or at 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA. 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

Jrl Ad ND47(1c)

If you write maker identify as IEN-7204

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN752 for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.

A·B·DICK
THE FIRST NAME IN DUPLICATING

A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN-7205

BLAW-KNOX GRATING

Electroforged into rigid, one-piece panels. Twisted cross bar prevents slipping.

...GIVES BETTER SERVICE ON 5 COUNTS

1 SAFER FOOTING
2 GREATER STRENGTH
3 LONGER LIFE
4 LOWER MAINTENANCE
5 MORE OPEN SPACE

Bring your open steel flooring problems to Blaw-Knox for expert help. Bulletin 2365 sent on request.

BLAW-KNOX DIVISION of Blaw-Knox Company
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

BLAW-KNOX *Electroforged®* STEEL GRATING

If you write maker identify as IEN - 7206

If you write maker identify as IEN - 7207

DOWNS SAFETY GRABS ...GRIP ANYTHING!

FOR CRANES AND HOISTS...

Material lifting equipment will do more work—faster, easier—when you have the proper "grabs" for every type of load. No matter what your hoists are handling—pipe, rails, drums, plate or structural steel, stone, timber, boxes or odd-shaped objects of any description—there's a DOWNS *Safety* Grab that will enable you to do it faster, easier *and* safer. Learn new short cuts to greater efficiency for YOUR plant with DOWNS' *complete line* of *Safety* hoist grabs!

Write for Free Illustrated Catalog 200 Today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN - 7208

BE READY FOR *Every* CLEANING NEED

IDEAL BLO-R-VAC

Power-packed and with highest cleaning efficiency, IDEAL Blo-R-Vac speeds *all* your cleaning jobs! Low in first cost, it's actually *three rugged cleaners in one!* Vacuums lint, dirt, picks up water. Promotes scrap salvage — metal particles stay in big tank; lighter particles go into dust-tight bag. Power unit serves as a separate blower-sprayer or hand type cleaner. Full selection of attachments. 1½ or ½ H.P.

Triple Value!

A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer

Sold Through America's Leading Distributors
Canadian Distributor: Irving Smith, Ltd., Montreal

All in One!

CONVERTS IN A JIFFY! ... from a "tank-type" cleaner to a "hand-type" cleaner or blower.

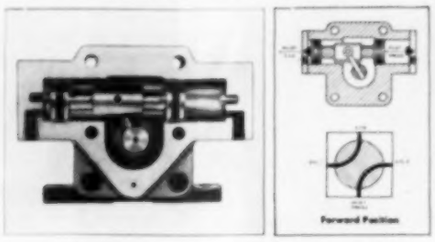
TRY IT FREE! IDEAL

IDEAL INDUSTRIES, INC.
1108 Park Ave., Sycamore, Illinois
Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.
Name
Company
Address
City Zone State

If you write maker identify as IEN - 7209

VALVE . . Four way pneumatic, pressure operated for pilot control

Source: LEDEEN MFG. CO.
1602 S. San Pedro St., Los Angeles 15, Calif.



Illustrated details cover line in Bulletin 1000

Model POV is new design in the company's line of rotary operating valves to handle air or liquid pressure to 250 pounds. The new unit employs a pressure-operated piston with lever-arm connection to the main valve disc for rotation in forward or reverse movement. Connections are provided in the pressure chambers at the two ends of the piston for local or remote pilot operating valves. The company is prepared to supply these valves for operation by hand, foot, cam or solenoid at service pressure to 150 pounds.

The valve is available with ¼ to 1¼-in. pipe connections. It applies in remote control where the operation must be at a distance, in automatic operation where movement of some part of a mechanism operates the valve to initiate another movement, in reciprocating service where a pressure operated piston must move continuously back and forth, and in installations where failure of electric power or line pressure can be employed to reverse the valve.

If you write maker identify as IEN - 7210

ELEVATOR . . Portable power lift rates 1,000 lb., 6 or 110 volt drive

Source: REVOLVATOR CO.
8704-8 Tonnele Ave., North Bergen, N. J.

For general plant and yard use

Uplifter, electric design, has been added to the company's portable hand lift elevator, previously described IEN-197-52. A roller chain and motor driven hoist take the place of the cable and crank-operated hoist in the older assembly. It can be specified with a 6-volt motor for operation by a storage battery or with a 110-volt ac. motor to plug into a shop circuit. A charger is supplied for the battery in the 6-volt design.

The platform measures 24 by 24 in. and has a vertical movement to 62 in. above the floor. Overall height is 77 inches. The elevator can be turned in a 41-in. radius.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7211

GIVE YOUR PRODUCTION A Wayne LIFT

Cut Handling Costs...Speed Shipments...Step-Up Production

From loading platform to production line there's a Wayne Industrial Lift to save you time, labor and money. Wayne Lifts include tilting dock, ramps, sidewalk elevators, dock lifts, materials lifts, crossover bridges, truck service lifts and many others. Everyone is custom engineered to the particular needs of your plant.

Wayne Industrial Lifts are made to last for years without trouble . . . designed for easy servicing. Wayne Engineers are materials handling experts . . . skilled in designing Wayne Lift Systems for improved production in your plant. Write today for the new Wayne Booklet on Industrial Lifts.

LIFT DIVISION
BRIGHTON, OHIO

Wayne

THE WAYNE PUMP COMPANY

If you write maker identify as IEN - 7212

DAYTON ROGERS

Dayton Rogers layout fluid is recommended for all tool, die, pattern and template layout work on any metal. Simply wipe the surface clean and brush it on. It *dries instantly* to a dark blue that is easy on the eyes. Scribed layout lines stand out clearly.

We're so sure that once you use it you'll prefer it, that we want you to try it free of charge. Just attach this ad to your company letterhead, indicate your name and position, and mail. You'll receive your free sample by return mail.

DAYTON ROGERS *Manufacturing Company*
2836 13th AVE. S.
MINNEAPOLIS, MINNESOTA

If you write maker identify as IEN - 7213

MARMAN COUPLINGS

Join Ducting, Tubing and Pipe without Bolted Flanges or Threads!

Marman Couplings assemble fast, hold tight, and seal positively. Strong circumferential pressure from the "V" band locks the flanged ends together. Simple rolled sheet metal or machined flanges can be made integral with, or added to, the duct, tube or pipe to be fastened. Joints can be made with or without gaskets.

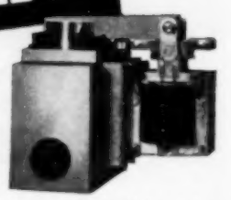
Marman Couplings do away with expensive, heavy, bolted or threaded machine flanges. They are supplied in continuous or segmented design, either solid or ventilated. Tension is applied by T-bolt take-up or the patented Marman Quick Coupler which allows rapid assembly and disassembly. Marman Couplings are made to accommodate a wide range of temperatures, pressures and size requirements.

WRITE DEPT. I-7 for complete information on Marman Couplings

MARMAN PRODUCTS CO., INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

If you write maker identify as IEN - 7214

High Pressure SOLENOID VALVES . . .



have working pressures range as high as 3000 psi. Specifically designed for remote push button control of hydraulic systems, as well as for the handling of any non-corrosive fluids. Poppet construction eliminates leakage. Impregnated coils are oil and moisture resistant. Unit can be mounted in any position. Available in 110-220 A.C.

WRITE FOR OUR ENGINEERING COOPERATION AND FURTHER DETAILS

WATERMAN Engineering Company
725 CUSTER AVENUE — EVANSTON, ILL.

If you write maker identify as IEN - 7215

THIS P-K SCREW SAVES UP TO 50% IN ASSEMBLY WORK-HOURS

cuts thread as it's turned in

AVOIDS
Tapping
Bolting
Riveting
Inserts in Plastics

ADDS
Fastening Strength

SAVES
Time and Trouble in Millions of Applications

P-K TYPE F
Hardened SELF-TAPPING SCREW
One of six major types for every metal and plastic assembly. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
YOU'RE O.K. WITH P-K® — THE ORIGINAL
PARKER-KALON SELF-TAPPING SCREWS

AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

If you write maker identify as IEN - 7216

HEADLINE NEWS

EXTRA... DETROIT POWER SCREWDRIVER ANNOUNCES
IMMEDIATE DELIVERY

No Waiting—Start Now to Benefit with These Outstanding
ASSEMBLY AIDS

Various Models to Suit Your Requirements

ADD Phenomenal Speed and Efficiency

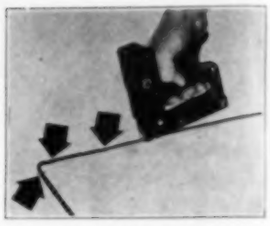
No need to continue slow, costly hand methods; use Detroit Power Screwdrivers and profit immeasurably by increased production and economy. Drive all types of screws with almost incredible speed, as fast as one to two seconds per screw. Detroit Power Screwdrivers play an important part in the present-day industrial capacity to produce rapidly . . . So, now that prompt deliveries are made possible, send sample assembly for production estimate at once and let our 26 years' experience as specialists in assembly problems serve your individual needs. Also receive our catalog describing in detail our complete line of POWER SCREWDRIVERS, HOPPER FEEDING UNITS, NUT DRIVERS and SPECIAL ASSEMBLING MACHINES.

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICHIGAN

If you write maker identify as IEN - 7218

STAPLING . . Spring driven tool employs handle to cock and release

Source: BOSTITCH INC.
893 Mechanic St., Westerly, R. I.



Loads at the front

New design of the company's Type T-5 stapling tacker, previously described IEN-275-50, is now available to drive staples that will secure the new Whitney Blake two or three-conductor telephone wire on a flat surface. A grooved nose on the stapler enables it to fit over the wire and hold it against the surface. The stapler is driven when the handle is depressed. The tool design prevents the staple from indenting or damaging the wire. The magazine holds 80 staples.

If you write maker identify as IEN - 7219

PAINTING . . Automatic machine for small parts, cleans, paints, dries

Source: CINCINNATI CLEANING & FINISHING MACH. CO.
49 Hecla St., Dept. IEN, Ironton, Ohio

Available for specified use

Small work pieces, such as voltage regulator covers measuring 3½ by 2½ by 2 in., are assembled on racks to ride a monorail conveyor in a closed circuit through the company's new combination of cleaning and painting equipment. The installation occupies a floor space measuring about 20 by 20 ft. and is 10 ft. in height. It handles 1,440 parts per hour.

The loaded racks pass through a washing section where they also are phosphate coated and rinsed. Then they move through an infra-red drying oven and enter a paint dip tank. They emerge from the tank to drain for a predetermined interval and then pass through a second drying oven prior to return to the combination loading and unloading station. The operator's activities are unloading and reloading.

If you write maker identify as IEN - 7220

GAGE . . Reads ram pressure being exerted upon work in a press

Source: STUDEBAKER MACHINE CO.
1114 S. 9th Ave., Maywood, Ill.

Ruggedly built

Three sizes of this new gage and its operating piston assembly provide pressure readings to 5, 25 and 50 ton in terms of pounds. It applies on a press so the ram will depress the plunger as it is brought down. This plunger transmits through its sealed-in fluid to provide the gage reading.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7221

RUEMELIN
Blast Cleaning
CABINETS

RUEMELIN Blast Cabinets are practical for a great variety of cleaning operations. They are extensively used to remove heat-treating scale and to clean sub-assemblies in metalworking shops, foundries, aircraft factories, etc. Built in many sizes. Furnished complete with dust control equipment. Write for Bulletin 32-B.

RUEMELIN MANUFACTURING CO.
1863 N. PALMER ST. • MILWAUKEE 12, WIS., U. S. A.
Manufacturers and Engineers SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS

If you write maker identify as IEN - 7222

Detailed photo and overall drawing of a recent Sta-Warm compound melter of 1,000 gal. capacity.

Large or Small

Sta-Warm BUILDS THEM ALL

From a half-pint wax dropper that is hand held, to the 1000 gal. rectangular compound melting tank above . . . and any size in between . . . Sta-Warm builds them all.

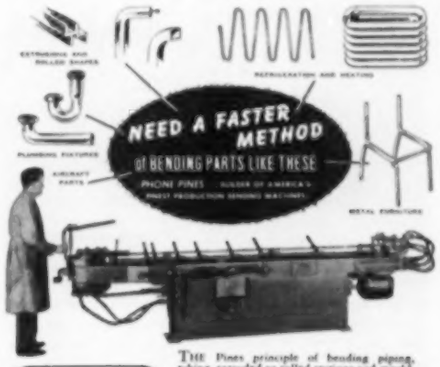
And all are built to the same "basic" specifications of wide distribution of low-wattage heat that melts material efficiently, fast, uniformly . . . without burning or carbonizing.

In the large tank shown, more than 17,000 ft. of resistance wire was wound into 4,450 ft. of heating element and this was evenly wound around entire side wall and bottom areas of this tank. The photo shows a workman making the last of 1000 terminal block connections so only the filled part of the tank will have heat applied to keep the compound melted.

Do you need a thousand gallon tank . . . or a half-pint heater? Better write Sta-Warm *first*.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 7223



COST CUTTING FEATURES OF PINES BENDERS
- Produces Accurate Uniform Bends without marking or distorting.
- Push-Button Control — simple, easy for one man to operate.
- Mighty Versatile — handles wide variety of work — serpentine, coil, compound or multiple bends.
- Fast Set-Ups — tool changes in 10 minutes.
- Superior Design — tapered alloy-steel spindle, adjustable gibs, Timken bearings, Vickers pump.

THE Pines principle of bending piping, tubing, extruded or rolled sections and mouldings, employes tested and proven methods that assure best results and peak production. Roll, compression, draw, and stretch bending methods are skillfully adapted to best suit your material and product needs. Hydraulic power, push-button control and automatic operation is combined to assure high efficiency and lower production costs. Ask Pines to analyze your bending problems now. Phone Aurora 2-7608.

WRITE FOR FREE LITERATURE
Find out how the Pines Benders are designed to save time and cut costs. Literature describes and pictures various models, attachments, and methods on actual jobs.

PINES ENGINEERING CO. INC.
632 WALNUT • AURORA, ILLINOIS

If you write maker identify as IEN - 7224

NEW!

Black & Decker ¼" Heavy-Duty HOLGUN® only $44.00

NOW . . . INDUSTRY'S MOST FAMOUS ELECTRIC DRILL IS FINER THAN EVER! This brand-new BLACK & DECKER HOLGUN has 25% *more power* with a new B&D-built motor that *can't be stalled* at rated capacity—a new handle shaped for plenty of finger room — husky, high quality parts to make at really *heavy-duty* — light weight (3¼ lbs.) to cut fatigue — compactness that's unmatched for close-quarter drilling. See your nearby B&D Distributor for a demonstration of features that save you money, muscle and man-hours! WRITE FOR FREE LITERATURE TO: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

*Trade Mark Reg. U. S. Pat. Off.

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker
PORTABLE ELECTRIC TOOLS

If you write maker identify as IEN - 7225

SYNTRON SHAFT SEALS

FOR PUMPS • COMPRESSORS • TURBINES
ENGINES • MIXERS • MACHINES
PROPELLER SHAFTS

Provide Positive Long-Life Sealing of Gases and Liquids

Self-contained
Self-lubricating. Easy-to-install units that provide fully automatic, self-adjusting, sealing action. Easy on power. Easy on shafts.

If your problem is hard-to-handle liquids, leakage, shaft wearing conditions or maintenance cost . . .

Write for Free Illustrated Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 7226

Reduce starting current draw with the Wagner Increment Motor and Starter Combination

On any application where reduced current draw at start is required because of locked current restrictions, you can limit the in-rush of motor current during the starting period with the low cost Wagner Increment Motor and Starter "Package." This combination is economical to install and permits the use of high grade magnetically operated control equipment at a low purchase price. Why not investigate this Wagner combination today? Write for full information, or consult the nearest Wagner branch office.

Wagner Electric Corporation EST. 1891
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 7227

"We have used your Bin-Dicators in our fertilizer plant for some time and would not be without them. I can show you a case where a single Bin-Dicator replaces a man," writes a New England manufacturer.

BIN-DICATOR "keeps an eye" on levels of bulk materials in silos, hoppers, bins, chutes and automatically reports to central control point. Prevents over-filling; prevents overfeed and underfeed to conveyors and filling equipment; prevents delays and waste. Low cost, easy to install, simplest operation. Widely used.

BIN-FLO Aerator Units keep dry, finely ground materials moving in bins, hoppers, chutes; prevent packing, bridging.

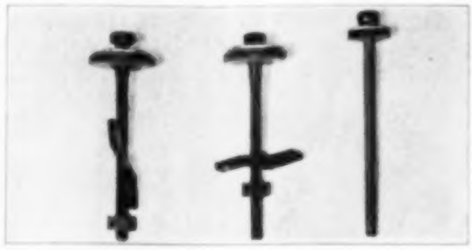
NEW 1952 CATALOG FREE

THE BIN-DICATOR CO.
13946-B Kercheval · Detroit 15, Mich.

If you write maker identify as IEN - 7228

FASTENINGS . . Bolt and screw for installation of corrugated roofing

Source: FABRICATED PRODUCTS CO.
1952 Water St., West Newton, Pa.



On access to one side

Access is required only to the top side for installation of corrugated asbestos-cement roofing when the company's new Hole-grip toggle bolt and Topseal self-tapping screw are employed. A water-tight job results by application of the Weath-R-Seal washer under the bolt and screw heads. This washer, previously described IEN-9258-49, is a two-part unit consisting of a neoprene sealing member and either stainless steel, galvanized steel or aluminum backing washer. When the fastenings are pulled down tight the neoprene seals around the fastener shank and outer edge of the metal washer.

Assembly starts by drilling a ½-in. hole through the overlapping corrugations on the sides of the sheet. The fastening is inserted with the toggle member lying against the shank as shown to the left in the illustration. The nut and the toggle itself pass through to the inside face of the sheet where the toggle drops into horizontal position as shown in the center of the illustration. At this point a power nut runner equipped with a special socket is employed to turn the bolt and draw the nut up tight. The nut carries lugs that engage the toggle to prevent the nut from turning as the bolt is turned. Final compression draws the washer down tight to complete the assembly.

The end laps of the corrugated sheets are secured to the supporting steel frame work by driving the self-tapping hexagon-head screw shown to the right in the illustration. When this screw is drawn down tight its neoprene washer also seals against leakage.

If you write maker identify as IEN - 7229

DEODORIZING . . Chemical cake for refuse and garbage containers

Source: SAN-A-LIZER CORP.
3051-55 Rosslyn, Los Angeles 65, Calif.

$1 each, six for $5

Pail-Pride is a fragrant chemical cake characterized by its ability to destroy odors, repel insects. It is supplied in a sealed package with a cotter-key for application in a container lid. Action starts when the seal is broken. Service life for a cake under normal conditions is about 6 months.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7230

it takes BOTH regular and self-locking
SET SCREWS
to solve ALL problems

for REGULAR Set Screws

SETKO socket and slotted SET SCREWS

For the past 17 years, we have furnished billions of set screws to satisfy the requirements of nearly 1300 different manufacturers.

If size, special head or point, price or delivery are your problems, send for our Catalog. It illustrates and describes set screws, headless or with various type heads and points in all materials.

for SELF-LOCKING Set Screws to lick vibration or get close-precision setting you need **ZIP-GRIP*** **SELF-LOCKING SET SCREWS** During the past year, more than 130 makers of everything from radios to washing machines, from pumps to power mowers have solved problems like yours with ZIP-GRIP.* *PAT. PENDING

Send for FREE DEMONSTRATOR —that demonstrates ZIP GRIP's* three way Self Locking effect. We'll also include illustrated Data Sheet and offer of Test Samples to fit your application. Send now.

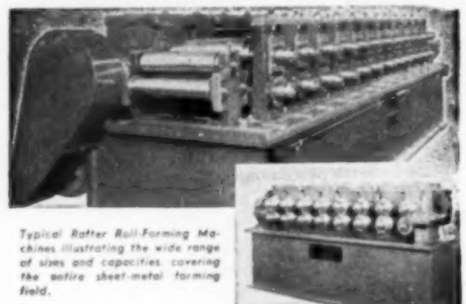
Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

If you write maker identify as IEN - 7231

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as IEN - 7232

LIKE AN ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak
MUSHROOMS into ATOMIC WASTE
of approximately 95,000 gallons of water yearly—costing:
$24.14
@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:
$[illegible] if coal ([illegible] lbs.)
$91.09 if oil (792 gals.)
$84.41 if gas (84,41[illegible] cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

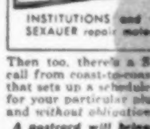
PAT'D.
"EASY-TITE" Faucet washers

. . . a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300° F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape . . . causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.



THE NEW "SEXAUER" CATALOG, Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and without obligation.

A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-72
2503-05 Third Avenue, New York 51.

as advertised in THE SATURDAY EVENING POST

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 7234

SEALTITE

flexible, liquid-tight electrical conduit cuts costs

FLEXIBLE—easy to install
LIQUID-TIGHT protection
STRONG—long-lasting

Heavy outer jacket resists steam, chemicals, oil, water, abrasion, etc. Uses standard rigid electric conduit fittings. Available at your electrical supply house. The American Brass Company, American Metal Hose Branch, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Company, Ltd. use

SEALTITE
ELECTRICAL CONDUIT
an Anaconda product

*Trade Mark

If you write maker identify as IEN - 7235

• AUTOMATIC!
• READY TO GO!
• DEPENDABLE!

CHROMALOX *Electric* CIRCULATION HEATERS

Do your heating jobs Better and Faster

Production goes up, costs go down with Chromalox Electric Circulation Heaters. Uses include heating process kettles and tanks; generating and drying steam; preheating fuel oils; heating Dowtherm, Aroclor, Prestone, etc.; heating nitrogen, air and other gases. Dependable around the clock service, temperatures up to 750°. Fully insulated, with thermostatic control. Just Connect it, Set it, Forget it!

See CHROMALOX CATALOG 50 FOR ALL YOUR HEAT REQUIREMENTS

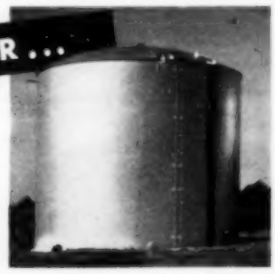
Its 48 pages give the answers to many heating problems. Write for it today.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See *Chromalox Immersion Heaters Advertisement, Page 5*

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 7236

WATER . . .



for general mill use . . .

• The Horton flat-bottom tank shown above is used to store a reserve of water for general mill service. Flat-bottom welded tanks provide economical storage facilities for water, fuel oil and other liquids.

When requesting quotations on Horton welded steel tanks, please state capacity required, dimensions and location. Capacities range up to 10,000,000 gallons.

• *Above: 250,000-gal. Horton flat-bottom tank with umbrella roof. It is 37 ft. in diam. by 32 ft. high.*

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D.C.
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 7237

CAPACITOR . . Hermetically sealed, will hold a charge for 4,800 hours

Source: INDUSTRIAL CONDENSER CORP.
3265 N. California St., Chicago 18, Ill.

Technical data in Catalog 1117

Type B designates new design in the company's line of Stabelex "D" capacitors. Each is hermetically sealed inside a hot-tinned steel flange-equipped housing with glass standoff terminal seals. The non-inductive winding is suited for an operating temperature range between minus 80 and plus 75 deg. C. Capacity tolerance is plus or minus 10 per cent in standard construction. It can be specified as low as 1 per cent on special order. Operation can be specified on 400 or 600 volt dc.

If you write maker identify as IEN - 7238

CLEANING . . Liquid detergent for steam spray and soak tank use

Source: BRULIN CO.
Columbia Ave. at 30th St., Indianapolis 7, Ind.

$2.05 per gallon in 55 gallon drums

The company announces recent improvement in its previously developed concentrate liquid detergent to provide a material for addition to water in a hot alkaline dip tank or in steam spray equipment. The liquid is known as concentrated liquid steam cleaner. It is non-toxic and can be used indoors without need for special ventilating equipment, protective clothing or gloves.

Low surface tension in the material permits it to soak into grease, oil and dirt and provide a fast emulsifying action that cleans a surface and leaves it free from film. The action will not corrode steel or light metals such as aluminum and magnesium. It will not etch plastics such as those employed in aircraft. It mixes with hot or cold water, will not leave a lime deposit on steam cleaning equipment. Packaging is in 5 to 55 gallon containers in standard arrangement.

If you write maker identify as IEN - 7239

HAMMER . . Carpenter hand tool with octagon head and hickory handle

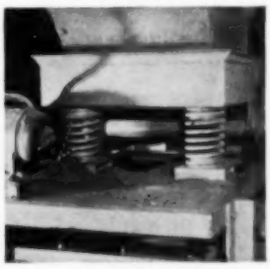
Source: STANLEY TOOLS
478-82 Myrtle St., New Britain, Conn.

Distinctive head shape

The company announces a new line of "100 Plus" octagon head hammers with curved and ripping claw in popular sizes. The head is made of forged alloy steel, heat treated and tempered. The claw is beveled to grip the shank of a nail or a very small brad. The hickory handle is processed, lacquered and triple wedged into the head.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7240



SIMPLIFIES VIBRATING FEEDER PROBLEMS

Hewitt-Robins Vibra-Feeder®. . .
First Practical Fully Mechanical Vibrating Feeder

Simple To Operate: Completely automatic. Just push a button and start feeding—requires no attention or adjustment—can't be overloaded with standard hopper design—won't dampen out—some sizes draw only 2 amps.

Simple Construction: Vibrating mechanism is *fully mechanical*—small and compact—completely dust-tight—practically noiseless. *Only electricals . . . an AC or DC 1 HP motor and a simple light-duty plug and receptacle.*

Full Range Of Sizes: Available from 24" to 48" wide and 48" to 144" long; also other sizes to meet your specifications.

Write for Bulletin 134 for complete information.

HEWITT-ROBINS HR INCORPORATED
STAMFORD, CONNECTICUT

If you write maker identify as IEN - 7241

The more cartons you make . . THE MORE YOU SAVE!

Our Model PA Carton Former uses inexpensive die-cut blanks which are far cheaper than factory-processed or hand set-up cartons. Moreover, only one attendant is required. You can turn out up to 102 neatly-squared, firmly-glued cartons per minute. And they come out of the machine right-side up—ready to move into your production line.

The PA is quickly adjusted for various sizes and can be adapted for different types of cartons. Check the savings the completely automatic Model PA can give you.

Write for literature.

• CARTON DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS DENVER LOS ANGELES
SAN FRANCISCO SEATTLE VANCOUVER WASH. TORONTO, MEXICO D.F.

If you write maker identify as IEN - 7242

WARD LEONARD NOW! Motor Starters

Order now from Ward Leonard's line of across-the-line-type non-reversing a-c magnetic starters. Four standard sizes: 0, 1, 2, 3.

Compact unit construction. Complete accessibility of parts. Simplified installation and inspection. High current interruption capacity. Thermal overload protection. Long, trouble-free operating life. Open or enclosed type.

Write for Starter Bulletin 4110. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

If you write maker identify as IEN - 7243

LOOK INTO THIS!

YOURS WITHOUT COST OR OBLIGATION

If you have any interest in lighting efficiency and economy and if you'd like the answers to questions such as these:

WHAT is the most profitable cleaning cycle for the lamps in my plant?

HOW can I duck 83% of my lamp burnouts?

WHEN does group replacement pay off?

WHY and how can I replace six lamps for what it now costs me to replace one?

MAIL THIS COUPON TODAY

CHAMPION LAMP WORKS
ETNA, MASSACHUSETTS

Please mail your *Free File Folder It* on planned cleaning and group replacement, at no cost or obligation to:

Name _____ Position _____
Company _____
Street _____
City _____ State _____

If you write maker identify as IEN - 7244

Defense Contracts Call for Hinges? Call on STANLEY...

You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers—complete research and tool-making facilities—the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your D. O. deadlines. Write for full information—not only on special hinges, but drawings and stampings as well—now!

PRESSED METAL DIVISION
The Stanley Works New Britain, Conn.
New York • Chicago • Detroit • Seattle
San Francisco • Los Angeles

If you write maker identify as IEN - 7245

KEYNOTES

2651 McCasland • East St. Louis, Illinois

If you write maker identify as IEN - 7246

No Floor Damage!

WHEN YOU MOUNT YOUR MACHINES ON

UNISORB®

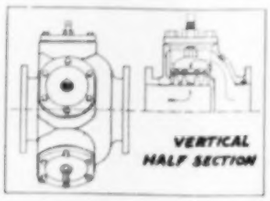
UNISORB - Mounting requires no bolts . . . no lag screws . . . no old-fashioned, destructive floor drilling. A special cement (we supply it) binds the UNISORB pads to machine feet and floor with a holding strength of 1500 p. s. f. *minimum!* What's more, UNISORB absorbs from 60% to 85% of transmitted machine vibration and noise . . . saves floors, buildings, machinery . . . often permits higher machine speed. Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-1 SOUTH STREET
BOSTON 11, MASS.

If you write maker identify as IEN - 7247

VALVE . . Disc type check design for discharge line on an air compressor

Source: PENNSYLVANIA PUMP & COMPRESSOR CO.
50 Bushkill Drive, Easton, Pa.



Assemblies as shown

A careless start against a closed discharge line cannot harm an air compressor when the manually operated line valve has been replaced with this new design in the company's Aircheck line. This new valve presents negligible resistance in forward movement of the compressed air. It shuts tightly against reverse movement in a checking action. It also breaks up delivery pulsation and practically eliminates any noise in the discharge line or accompanying air receiver.

The valve is available in 8, 10 and 12-in. sizes with flanged connections supplementing the original threaded design, previously described IEN-7950-48, in sizes from 1 to 6 inches. Construction is in cast iron for the body, stainless steel for the valve discs and springs for 150 lb. rating. A steel body can be specified for pressure to 600 pounds.

Sizes to 6 in. take one element assembly. The three new sizes take multiple assemblies up to the five shown for the illustrated 12-in. valve. This valve measures 23½ in. between its flanged faces. Each element assembly is accessible for inspection or replacement after removing its cover plate.

If you write maker identify as IEN - 7248

PRESS . . Open back inclinable, 18 ton, electrically operated clutch

Source: FAMCO MACHINE CO.
652 Thomas St., Kenosha, Wis.

This is Model 59

Electromatic trade names new assembly in the company's line of presses in which electric operation with foot switch or pushbutton control is employed at the 9 point jaw clutch built into the flywheel. Patent has been applied for on the new construction. The assembly includes a limit switch that assures single-stroke control and a selector switch by which the press can be set for continuous or nonrepeat action. A neutral position in this switch locks the clutch. An electronic timer is available for automatic press operation.

The drive takes a 1-hp. motor operating at 1,140 rpm. for 150 strokes per minute. The stroke is standard at 2½ in., can be specified for a maximum of 3½ inches. Shut height is 7½ in. from bed to slide with the stroke down and adjustment up, based on the standard 2-in. stroke. Slide adjustment is through 2 inches. Bed area measures 10 by 16½ in. from front to back and from right to left. A 5 by 7-in. opening is provided in the bed. This opening is covered by a 1½-in. bolster plate. The slide is equipped with a punch shank recess measuring 1½ in. in diameter by 2 in. in depth. Floor space is 31 by 20 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7249

Bulletin 705 Reversing Switches

- Contactors mechanically interlocked
- Silver-alloy contacts need no cleaning

This complete line of switches provides reliable across-the-line starting and reversing of polyphase squirrel-cage and slip-ring motors, as well as certain types of single-phase motors used on machine tools and other industrial equipment. May also be used in motor plugging operations. Write for descriptive bulletin. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

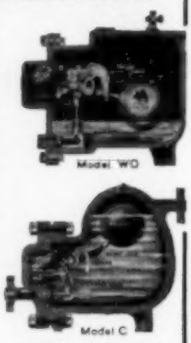
ALLEN-BRADLEY
quality
MOTOR CONTROL

If you write maker identify as IEN - 7250

NICHOLSON W. O. TRAPS

CANNOT LEAK LIVE STEAM

Even though re-evaporation completely dries up its body, a Nicholson weight-operated trap will not leak steam. These units do not depend on buoyancy of float to raise valve. Other features: large orifices keep valve clean; non-wire drawing; rugged for unavoidable abuse; not easily affected by dirt, pulsation; of stainless steel where it counts. Widely used for steam purifiers, super-heated steam lines, headers, separators, heaters, dry kilns, pipe coils, turbine throttle valve drips, stop and check valves, etc. Also for air and gasoline.



CATALOG 751

4 TYPES — Pressures to 200, 500, 650, 1500 lbs.

159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 7251

Now Available For

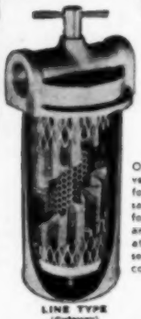
WATER FILTERING

SUMP TYPE (Cutaway)

Capacities of (Line Type) 5 to 50 gpm. (Sump Type) 5 to 100 gpm. Model mesh sizes 30 to 200.

The Great

MARVEL SYNCLINAL FILTERS



LINE TYPE (Cutaway)

- EASY TO CLEAN
- OPERATE LONGER BETWEEN CLEANINGS
- EFFICIENT
- NO MOVING PARTS TO WEAR OR GET OUT OF ORDER

Outstanding qualities made Marvel Synclinal Filters the choice for hydraulic oil systems. The same qualities are now available for water filtering, in both sump and line types. Line models operate in any position and may be serviced without disturbing pipe connections.

Write For WATER FILTER DATA

MARVEL ENGINEERING COMPANY
627 W. Jackson Blvd. Chicago 6, Ill.

If you write maker identify as IEN - 7252

Time, Labor and Money Saved with PREFABRICATED

NATIONAL EVER-READY SECTIONAL WOOD SHELVING

(PATENT PENDING)

For economical storage, warehousing and stock rooms in commercial and industrial locations. Permits of unlimited expansion. Unskilled labor can erect or dismantle a section in less than five minutes!

Made of finest quality woods, each 3' section guaranteed to support 1½ tons. The super tension principle and the four steel latches and bar at end of each shelf assure greatest strength and rigidity. Shelves are adjustable to any height from 2" up. No bolts, screws, nails or other fastening devices are required for National Shelving. When not in use 300 lineal feet of shelving can be stored in a space of 8' x' 6 x 8'.

PROMPT DELIVERY
Manufactured exclusively by

The NATIONAL CORPORATION
Orange, New Jersey, U. S. A.

If you write maker identify as IEN - 7253

Saves time and money inspecting small dimensions . . .

Nothing else like it! A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

A product of BELL & HOWELL CO. Distributed by

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN - 7254

FOR MATERIAL HANDLING—

more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

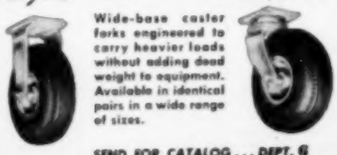
More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

Rigid CASTER FORKS Swivel



Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. G

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 7256

SEPARATING . . Centrifugal unit removes moisture, dirt from air line

Source: C. A. NORGREN CO.
3432-E S. Eliot, Englewood, Colo.

Dirt and water blow out

Centrifugal action is combined with filtering through a fine-mesh element to remove dirt and moisture from a compressed-air line in this new Series 22B-6 and Series 22B-8 separators. The two sizes apply in ¾ and 1-in. pipe lines for air flow to 140 cfm. at pressure to 150 lb. and temperature between 40 and 120 deg. F.

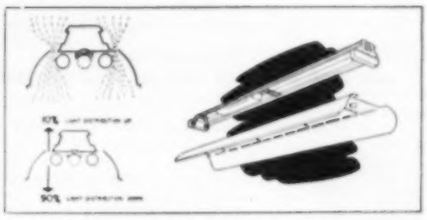
Incoming air, with entrained dirt and moisture, enters the transparent plastic housing surrounding the filter element. Centrifugal action set up by a deflector throws the dirt and moisture to the wall of the housing where they drain down past a baffle that prevents re-entry into the air stream. Space below the baffle will hold 1 pt. of liquid. The air turns inward to pass through the filter element and then up to the outlet connection at the top. A valve at the bottom of the housing is opened from time to time to remove the accumulated moisture and dirt.

Standard construction includes a 200-mesh Monel Metal screen. A sintered metal element providing 25 or 64 micron openings can be specified. The plastic bowl can be removed from the head for thorough interior cleaning.

If you write maker identify as IEN - 7257

LIGHTING . . Fluorescent fixture, reflector slots pass light and air

Source: DAY-BRITE LIGHTING INC.
5402 Bulwer Ave., St. Louis 7, Mo.



Illustrated data in Bulletin OD-568

Circulating air plus 10 per cent of the light from the company's new CFI Day-Line fluorescent fixture can pass upward through longitudinal slots in the reflector. The light illuminates ceilings and cuts down on contrast between them and the larger amount of light directed downward. The ventilating air carries dust away and promotes cool operation. The fixture is available in two and three lamp assemblies rating 40, 75 and 85 watts per lamp. The 75-watt units are Slimline design.

The fixture is an assembly of a 20-gage formed steel channel and porcelain enamel single piece reflector in either closed or open end design. It employs company's Turret sockets.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7258

EASY does it

Completely mark engineering assembly details, codings, numbers and other data on metal stampings, frames, electronic chassis, etc. in a fraction of a minute with Matthews Precision Metal Stencils. Matthews Precision Stencils give you controlled accuracy . . . allowing average workers to perform skillful assembly jobs, easily, surely, quickly. For complete information and literature on Precision Stencils

Write today to

JAS. H. MATTHEWS & CO.

3962 FORBES ST. • PITTSBURGH 13, PA.

If you write maker identify as IEN - 7259

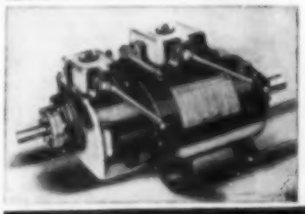


plate or platform mounting

9000-B (1-5 H.P.) 5 H.P. capacity with input speed of 900 r.p.m. Gear ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

8100-B (5-10 H.P.) 10 H.P. capacity with input speed of 900 r.p.m. Gear ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra Cost.

9300 (30 H.P. capacity with input speed of 900 r.p.m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information

up to 50 h. p.

WESTERN TRANSMISSIONS

If you write maker identify as IEN - 7260

Isn't it time YOUR business enjoyed these savings, too?

SAVINGS to the paper industry—Moving bulky paper rolls

SAVINGS to stevedore operations—With fast, high, safe lifting

SAVINGS to the chemical industry—Safely handling drums and carboys

Exclusive YALE Gas Truck Features Cut Materials Handling Costs . . . and Maintenance Costs, too

• Time lost in bringing YALE Gas Truck Savings to your business is *money* lost. For YALE Gas Trucks can cut up to 75% off your materials handling costs . . . save even more in reduced maintenance costs and production stoppages.

Find out now how YALE Gas Trucks' exclusive features reduce your bills for breakdown and wear in clutch, drive, steering assembly—every working part of the truck. Call your YALE Representative—or mail the coupon below.

YALE

MATERIALS HANDLING EQUIPMENT

YALE is a registered trade mark of The Yale & Towne Mfg. Co.

MAIL THIS COUPON TODAY

The Yale & Towne Mfg. Co., Dept. 367
Roosevelt Blvd. & Haldeman Ave., Phila. 15, Pa.
How can YALE Industrial Gas Trucks do more—save more—for me?
☐ Please have your local representative call
☐ Please send free detailed literature

Company _____
Name _____ Title _____
Street _____ City _____ State _____
In Canada write: The Yale & Towne Manufacturing Co., St. Catharines, Ont.

YALE ELECTRIC INDUSTRIAL TRUCKS • YALE WORKSAVERS • YALE HAND TRUCKS
YALE HAND AND ELECTRIC HOISTS • YALE PUL-LIFTS

If you write make identify as IEN - 7262

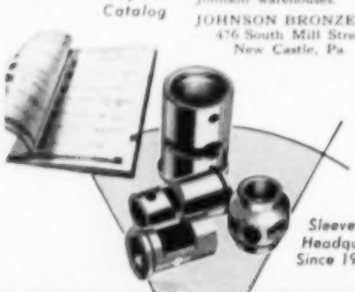
JOHNSON ELECTRIC MOTOR BEARINGS

for **ANY** *Type Motor*

The Johnson EM Bearing line is the most complete in the market . . . over 300 individual bearings. Each bearing is made to precise motor specifications, flanges, oil holes, oil grooves, slots and tolerances correct for each installation. In every case Johnson EM Bearings are equal to, or better than, the original equipment. Bearings for all makes of motors are stocked by authorized Johnson distributors and Johnson warehouses.

Write today for Catalog

JOHNSON BRONZE CO.
476 South Mill Street
New Castle, Pa.



Sleeve Bearing Headquarters Since 1901

JOHNSON JB BEARINGS
Sleeve Type

If you write make identify as IEN - 7263

Need Conveyor Chain? **NOW**

We're In Position To Make
IMMEDIATE DELIVERY
X458 Drop-Forged Rivetless Conveyor Chain

Improved production and material conditions have enabled Jervis B. Webb Company to stock an adequate supply of X458 Chain — ready for immediate delivery — to meet your conveyor needs.

The No. X458 Drop-Forged Rivetless Chain for Trolley Conveyors (illustrated above) has the improved webbed side link which substantially stiffens it. Also, this type link prevents telescoping of the chain while in service. Simple and strong, it is cheaper and lighter per unit of ultimate strength than any other type of conveyor chain. It can be installed or removed by unskilled labor. Having no rivets, welds or bolts, X458 Chain requires no special or joining links and may be disconnected at any point, yet it is so designed that it cannot become disconnected while in service. No. X458 Chain is completely interchangeable with the Webb FIRST—the original No. 458 Chain designed in the early Twenties by Mr. Jervis B. Webb.

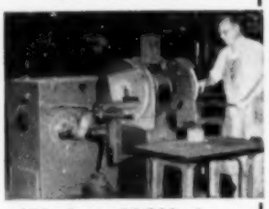
CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8015 ALPINE AVE DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write make identify as IEN - 7264

STOP DUST

***INSTANTLY** with* **DUSTKOP**

DUSTKOP 1400 cfm.



DUSTKOP 5600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard, pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write make identify as IEN - 7265

ELEVATOR . . Hydraulic assembly, multiple pistons, 45 ton load rating

Source: GLOBE HOIST CO.
Queen St. at Mermaid Lane, Philadelphia 18, Pa.

Push buttons control action

Special assembly of the company's standard hydraulic equipment is now employed in a new servicing installation capable of lifting two 45-ton railroad cars. One set of pistons applies under the car bodies. The other set carries short track sections to lift the trucks. Lift range is to 60 in. above the floor. While the cars are held in elevated position it is possible to release pressure from beneath the truck sections so the trucks can be dropped to the floor for individual attention.

If you write make identify as IEN - 7266

BRAZING . . Silver alloy particularly for use on carbide tools

Source: HANDY & HARMAN
80-84 Fulton St., New York 7, N. Y.

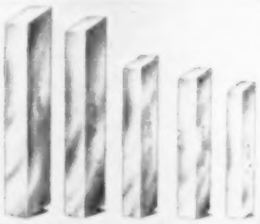
Acts well on refractory alloys

Type EB is a new alloy composed of 57 per cent silver and the balance of copper, manganese and tin. It is suited particularly to assemble carbide tips of the "hard-to-wet" variety. Melting point is 1,120 deg. F. Flow point is at 1,345 deg. F. There are no volatile elements in the alloy to interfere with vacuum applications. It has been employed successfully on Type 316 stainless steel.

If you write make identify as IEN - 7267

LATHE TOOLS . . High speed bits are supplied heat treated and ground

Source: DU MONT CORP.
du Mont St., Greenfield, Mass.



Trade named DuMost

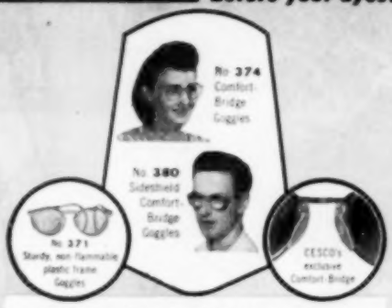
The company announces a new line of tool bits made of high-speed steel containing vanadium and featuring a fine grain structure. The bits are heat treated to test between 60 and 68 on the Rockwell C scale and then are finish ground. They are available in square section from ¼ in. to 1 in. with length from 2½ to 7¼ inches. Each of the nine sizes is beveled 20 deg. at both ends. Characteristics are toughness and resistance to abrasive action.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 7268

If you write make identify as IEN - 7269

CESCO *RIGHT... before your Eyes!*



CESCO's exclusive Comfort-Bridge Spectacles and Goggles offer—Broad-bearing nose rests... Selective bridge and eye sizes . . . Balanced weight distribution . . . Sturdy construction . . . Attractive appearance. There is a size and type for every face and every job. They are comfortable to wear. They provide real eye protection. They're *right before your eyes.* **Send TODAY** *for CESCO literature and the name of your CESCO safety equipment distributor*

CHICAGO EYE SHIELD COMPANY • 3226 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write make identify as IEN - 7270

ROTARY UNIONS

(Trade Name)

Type "S" Rotary Union

Mechanical Maintenance . . . Zero

The secret of ROTARY UNIONS' long service lies in its novel construction, which takes the strain off moving and sealing parts. Service of three years or more, *without any mechanical maintenance* is common. Standard models are used as connections for revolving shafts and drums for heating or cooling purposes for applications such as Steam up to 150 PSI, Hot Oil to 500°F, Coolants, Air, Gases, Water, Brine, Vacuum, and Alternate Mixtures at speeds up to 1000 RPM. Special models for higher speeds, pressures, and Dowtherm. Contact our nearest office for engineering consultation or write Dept. 7E for catalog.

"Where *Good Connections* Count"®

PERFECTING SERVICE COMPANY
332 Atando Avenue (Home Office and Factory) Charlotte, N.C.
Offices in Chicago - Cleveland - Philadelphia - Providence - New York - Montreal - Toronto

If you write make identify as IEN - 7271

DUDLEY PUMPS AND MOTORS

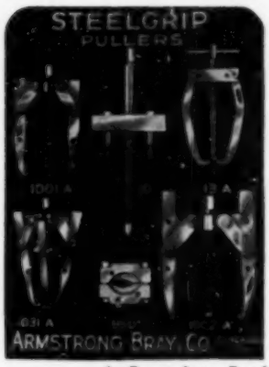
"NUTATING PLATE" OIL HYDRAULIC

SERIES 625 — 1½ to 11¼ GPM
POSITIVE DISPLACEMENT PISTON TYPE
0 to 1,000 PSI

Built for heavy duty, with higher efficiency and longer life. All moving parts are full-floating. No gears; no vanes; no cams or ball joints. Self-adjusting for all viscosities, temperatures and pressures.

EASTMAN PACIFIC COMPANY
2320 East 8th St. • Phone TRinity 6317 • Los Angeles 21

If you write maker identify as IEN-7272



The 6 most needed pullers

A Complete Package Unit . . .

These popular pullers come on a permanent steel tool rack. The sizes and type of STEELGRIP Gear, Wheel and Bearing Pullers most frequently needed in tool room, maintenance shop and garage are now packaged on this practical heavy gauge fitted steel board. With these drop forged quality tools, you can pull wheels, gears, pulley pinions and bearings off from shafts easily and quickly without battering or breakage.

Pullers are cadmium plated; board finished in deep blue "hammered finish" with gold trim.

Write for catalog of Standard and Special Wheel Pullers.

ARMSTRONG-BRAY & CO.
5380 Northwest Highway • Chicago 30, Illinois

If you write maker identify as IEN-7273

Better rubber products are made with Du Pont NEOPRENE

(Courtesy: PB Division, Byron Jackson Co.)

Neoprene standing mat provides comfort underfoot . . . resists abrasion, grease and oils

Safety and comfort are combined in this heavy-duty standing mat of neoprene. Its pebbled surface assures sure-footed traction . . . prevents slipping even when wet or oily. And the resiliency of neoprene assures maximum foot comfort on jobs that require standing.

Tough and durable, this mat has what it takes to give exceptionally long service. For neoprene resists the scuffing of heavy work shoes, the cutting and chipping action of sharp metal scraps. Even daily exposure to grease and oil has little deteriorating effect. And because neoprene resists sunlight and weathering as well, this mat is equally useful on outdoor jobs.

This is only one of neoprene's nearly limitless applications. In thousands of other resilient products, neoprene's outstanding combination of properties is adding to performance and service life. While Du Pont makes no finished goods of neoprene, your rubber goods manufacturer or distributor will be glad to tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-7, Wilmington 98, Delaware.

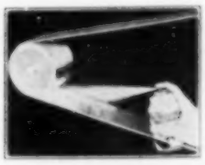
NEOPRENE
The rubber made by Du Pont since 1932

DU PONT
150th Anniversary
BETTER THINGS FOR BETTER LIVING . . . through Chemistry

If you write maker identify as IEN-7275

BELT DRESSING . . Liquid material acts at once when sprayed on a belt

Source: GRATON & KNIGHT CO.
324 Franklin St., Worcester 4, Mass.



Grako, Sprayson type

New formula for application by pressurized spray container is available in the company's Grako belt dressing, previously described IEN-6679-45. The container holds 12 oz. of the clear liquid, sufficient to treat about 350 sq. ft. of leather belt surface.

The liquid lubricates the leather fibers, keeps a belt pliant and resilient. It imparts a high coefficient of friction quickly following the spray application. The liquid contains no rosin or other materials that might harm the leather.

Recommended application is on the incoming side of the smaller of the two pulleys in a drive. A feature is the fact that the operator can hold the spray container at some little distance from the belt so there is no danger to him. Belts and pulleys can be treated easily in normally inaccessible locations.

If you write maker identify as IEN-7276

ELECTRIC CIRCUITS . . Conductor bonded to plastic on one or both faces

Source: UNITED STATES GASKET CO.
658 No. 10th St., Camden 1, N. J.

Can be stamped, punched, sheared

Chemelec Laminate is a new sheet material composed of a series of plies of Teflon impregnated glass cloth with a copper foil surface ply on one or both sides. It supplements the Multi-Bond sheet material, previously described IEN-10970-51. It is characterized by rigidity, thin section and by the fact that the laminated base is chemically inert, unaffected by corrosive atmospheres and highly resistant to attack by humidity and fungus. The sheet material remains serviceable in a temperature range between minus 65 and plus 200 deg. F. Thickness starts at 1/32 in. and increases in 1/32-in. intervals as required. Sheet size is 18 by 18 inches.

If you write maker identify as IEN-7277

PROTECTING . . Plastic goggle stops flying particles in the air

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Single unit $1.80

Type 608 designates a new goggle equipped with a transparent plastic frame for wide field vision. It can be worn directly over the eyes or over spectacles to provide frontal protection against foreign particles in connection with machines and hand work, laboratory work, spot welding, light grinding, chipping.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7278

Make Your Glove Dollars Increase Production

PIONEER
Stanzoils®

PIONEER's new Stanzoil catalog shows you how to buy the right glove for each job at the lowest per hour cost. Price buying alone is false economy — no *one* glove is suitable for *all* uses. It pays to buy for utmost protection from injury *plus* hand and finger dexterity that mean faster work. New Stanzoil catalog gives you an easy method of efficient selection. *Pioneer recommendations are unbiased — we make all kinds of liquid-tight gloves,* all-neoprene, neoprene or plastic coated, 32 styles, weights, sizes, colors. Pleased workers and no work stoppages are vital these days — write today for this helpful catalog.

R-7 Extra-Duty Pioneer Stanzoil red neoprene coated fabric, non-slip grip, curved fingers, preflex palm and inverted thumb design.

Industrial Glove Division

The PIONEER Rubber Company
638 Tiffin Road • Willard, Ohio

STANZOIL

OVER 30 Years OF QUALITY GLOVE MAKING

If you write maker identify as IEN-7279

WITH

LOWEST KNOWN VOLTAGE DROP

- "One-split bus" design A permits close spacing and electrical symmetry for reduced energy loss and low voltage drop.
- Solid ebonized asbestos insulating plates B and C totally enclose bus—high dielectric strength, conducts heat readily, impervious to moisture and resists arcing.
- Surge clamps D, and bolts F every 24" give structural strength to withstand 50,000 ampere shorts.
- Steel channels E complete housing to exclude dust. Exclusive design requires no ventilating openings for limiting temperature rise.

Write for details. Square D Company, 6060 Rivard St., Detroit 11, Mich.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-7280

If you write maker identify as IEN-7281

. . . with OKONITE cables

At Hormel's Austin, Minn. plant, thousands of dollars worth of meat are constantly being processed. Any breakdown of electrical service would cause a tremendous loss.

Hormel engineers recently chose Okolite-insulated submarine cables to convey power from the municipal plant, under the Red Cedar River, to the Hormel switchboard. Here's why:

Okolite insulation resists corona cutting, heat and moisture, requires no lead sheath even when totally submerged. All Okolite-insulated cables are subjected to super-voltage a-c and d-c tests far in excess of industry specifications.

On any installation where uninterrupted service is imperative, Okonite is your best cable buy. For full details, write for Bulletin IE-1055. The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE insulated wires and cables

If you write maker identify as IEN - 7282

SYNTRON

Thin - Flat

ELECTRIC HEATING ELEMENTS

For rapid, uniform heating of platens, pipes, kettles, tanks, ovens, dies, dryers and ducts, by direct or indirect immersion or contact.

Available in two widths—in lengths from 9" to 124"—in most any volt and watt combination—can be furnished in various shapes.

Write for literature—or send details of your heating problem.

Write for FREE Catalog Folder

SYNTRON CO.
810 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 7283

A GRINDING AND POLISHING UNIT!

As shown here, the 6-72 Vonnegut Abrasive Belt Unit is set up as a *lathe attachment* for cylindrical grinding and polishing. The same basic unit can be used as a *floor stand* and also as a *swing machine*. But that's not all—it has proved its value as a grinding and polishing unit for special machines, and as an attachment for other machines. There is the possibility that it can be used for an entirely new application in *your* plant. If you find that possibility, write us about it—we'll be glad to help you work out the details. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
1827 MADISON AVE., INDIANAPOLIS 25, U.S.A.

If you write maker identify as IEN - 7284

LOOK HERE!

FOR FASTENINGS THAT RESIST CORROSION

Here's a *bookful* of ready answers to your corrosion problems . . . the handy 56-page Harper Stock Book and Price List. It gives you information on all Harper Everlasting Fastenings—bolts, screws, nuts, washers, rivets and accessories in brass, bronze, copper, aluminum, stainless, Monel and other alloys—all products of America's leading manufacturer specializing in corrosion-resistant fastenings. Over 7000 items in stock and ready for delivery from warehouses and distributors, coast to coast!

This coupon will bring your copy!

HARPER
EVERLASTING FASTENINGS

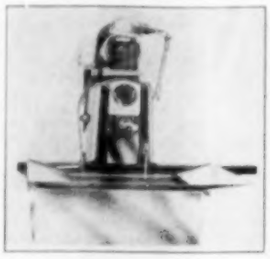
SPECIALISTS IN ALL NON-CORROSIVE METALS

The H. M. Harper Co.
8313 Lehigh Ave., Morton Grove, Ill.
Rush my copy of the Harper catalog.
Name.....
Company.....
Position.....
Address.....
City..... Zone.... State.....

If you write maker identify as IEN - 7285

HONING . . Variable speed machine, work bore range 0.185 to 2.500 inches

Source: SUPERIOR HONE CORP.
1617 Elkeno St., Elkhart, Ind.



For production use

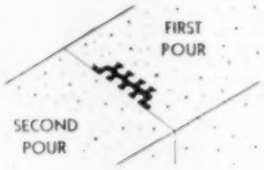
Model J for bench use has been added to the company's previously developed Model-AL floor mounted honing machine. Its motor-driven spindle rotates at any required speed between 400 and 1,000 rpm. The spindle is equipped with a bayonet lock to take permanent-type mandrels carrying stones to bear in the work without metal-to-metal contact. The machine measures 13 by 16½ by 25 inches. Its ½-hp. motor operates on 110-volt 60-cycle single-phase ac.

Separate coolant circulating equipment assembles on brackets at the front of the machine, can be applied and removed to serve several machines in a single set-up. This unit weighs 44 pounds and is equipped with a splash pan measuring about 21 by 30 in., a flexible hose and adjustable nozzle.

If you write maker identify as IEN - 7286

SEALING . . Plastic waterstop closes joints in concrete construction

Source: WATER SEALS INC.
402 W. Madison St., Chicago 6, Ill.



Ask for Bulletin LW-2

Harza Labyrinth is a new tough polyvinyl plastic waterstop. It is supplied in long lengths to cut on the job with a knife and apply in forms into which concrete is to be poured. The strip is nailed on the inner form surface at joint locations when the first pour is made. It anchors into the concrete to present a row of plastic fingers and recesses into which the second pour will flow to complete the seal.

Application can be made in concrete structures above or below grade, in foundation walls and between foundation floors and walls. It is suited for use where shrinkage openings will not be greater than ½ inch.

Identify as IEN - 7287

One girl, part time, with a G-E electronic metals comparator replaces three full time workers on hardness inspection of a small bearing part in a production line. The girl positions each work piece within a test coil and reads a meter that has been set previously to a piece known to be correct. The comparator detects and indicates variations in hardness by measuring differences in magnetic characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7288

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

A TOOL CRIB CONTROL SYSTEM THAT PAYS FOR ITSELF

It's actually easier, and takes less work, to maintain *complete* control over tools than to rely on makeshift routines. And the small investment it takes to set up an effective Tool Crib System is quickly amortized (1) through assured availability of tools, accurately scheduled to meet production line demands; (2) through numerous savings, readily demonstrated, on tool purchase, use, repair, and maintenance; (3) through reduced tool crib personnel.

Remington Rand offers a free booklet which shows in detail how many firms get these practical results. Remington Rand Tool Crib Systems keep paperwork at an absolute minimum – simplify the filing and finding of records by tool, and by worker, and give you at all times a *visible* picture of your tool supply status.

For your free copy of Booklet KD 641, write direct to the publisher – Remington Rand, Room 1223, 315 Fourth Avenue, New York 10, N.Y.—or use the Reader Service Form herein.

REMINGTON RAND INC.
Management Controls Library, Room 1223
315 Fourth Ave., New York 10, N. Y.

If you write maker identify as IEN - 7289

It's for You!

HOW TO
★ *Save Time*
★ *Save Floor Space*
★ *Reduce Handling Costs*

all in this FREE BULLETIN

On-the-job photos demonstrate the many advantages of the Nutting Jack and Skid System.

It is easy and inexpensive to install—and is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

SEND FOR YOUR COPY OF BULLETIN 48-JS NOW

SINCE 1891 **Nutting TRUCK AND CASTER CO.**
2013 DIVISION ST. W., FARIBAULT, MINN.

If you write maker identify as IEN - 7290

Cost Less Per Year... because They Last YEARS Longer

GOLD MEDAL LADDERS AND TRESTLES

Single Ladders 8' to 24'

Safety Platform Ladder 3' to 18' (platform heights) with Rack at Top for Safe Tool Storage

Safety Extension Trestles and Extension Planks

Extension Ladders 16' to 60'

Electric Step Ladder 4' to 12'

In factories, warehouses and other industrial properties, service and maintenance men demand Gold Medal Ladders and Trestles because they are stronger, safer and withstand hard usage for years longer. Made of the finest, selected woods, they're skillfully made in a large, modern factory by one of the oldest organizations in the field—with more than seventy years' experience.

Types and Sizes for Every Need

You can put your men at the most convenient working height *in greater safety* with Gold Medal Ladders—single, extension and step types—some of which are illustrated—*in a wide range of sizes.*

Used in thousands of plants. See how they can help you . . . write for new Catalog L-71.

Ladders, Scaffolds for any Purpose—Any Place—Any Time
Gold Medal Ladders Scaffolding
for Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO. Inc
38-21 12th Street, Dept. IEN, Long Island City 1, New York

If you write maker identify as IEN - 7292

RAILS AND TRACK ACCESSORIES

Buy Rails and Track Accessories from a reliable single source—to save time and money. L. B. Foster's large warehousing operations provide dependable delivery of all your trackage needs—new installations or replacements. We'll meet your exact requirements. All material is rigidly inspected before shipment and is backed by Foster's Guarantee.

Write for Rails & Track Accessories Catalog IE7

STEEL SHEET PILING • PIPE • WIRE ROPE

L.B. FOSTER CO.

PITTSBURGH 30, PA. NEW YORK 7, N.Y.
CHICAGO 4, ILL. HOUSTON 2, TEX.

If you write maker identify as IEN - 7293

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 7295

HUMIDIFYING . . Electronic control to govern operation of a humidifier

Source: BARBER-COLMAN CO.
1312-16 Rock St., Rockford, Ill.

Bulletin F-5173, data, diagrams, illustrations

Relative humidity is maintained within desired limits in either on-off operation or proportioning action by application of the company's new electronic humidifying and dehumidifying control. The equipment is available in four ranges of relative humidity, minimum at 25 to 50 per cent, maximum at 70 to 95 per cent. Differential adjustment in the on-off design is between 0.5 and 5 per cent. Throttling adjustment in the proportioning design is maximum at 10 per cent.

Actuating element consists of a dual wire winding on a polystyrene cylinder covered with a moisture sensitive compound and protected by a perforated plastic guard. Resistance change between the two wires of the element remains in close step with change in moisture content of the compound. This resistance is measured through one leg of a wheatstone bridge. The resulting unbalance is amplified to operate a relay and position a motor operated valve or a control motor on the humidifying or dehumidifying equipment.

The element mounts in an air duct or in the conditioned space in installations served by a central fan. It is supplied as a section of the control housing or as a separate inclosure in connection with an intake filter and a motor driven aspirating fan to draw the conditioned space air over it. Operation of the control is on 110-volt 60-cycle ac. Dimensions of the control housing shown are 11½ by 4 by 8½ inches.

If you write maker identify as IEN - 7296

TRUCK . . Hand platform unit, four sizes rate 750 to 1,500 pounds

Source: FAIRBANKS CO.
395 Lafayette St., New York 3, N. Y.

A utility design

Seasoned oak in tongue and groove assembly is reinforced with cross battens in the platform of this new Bantamweight truck. Four sizes range from 24 by 42 in. to 30 by 60 inches. The platform is mounted on the company's Lockweld double ball race swivel casters at one end and rigid casters at the other. One or two offset pipe racks can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

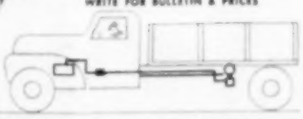
If you write maker identify as IEN - 7297

McDonald REVERSALARM keeps the road clear—BEHIND!

To protect workers in the path of backing-up trucks, equip your rolling stock with McDonald Reversalarm! Its powerful gong automatically sounds with unmistakable authority within the truck's first 8 inches of backward motion. Completely automatic—works even without truck motor running! Sturdy, weatherproof Reversalarm lasts for years — pays for itself many times over by preventing costly accidents.

WRITE FOR BULLETIN & PRICES

1932 - 1952
20 YEARS OF PROGRESS



Installing Reversalarm is easy. Its automatic interrupter switch connects to transmission speedometer cable take-off. Operates on 6- or 12-V systems.

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 7298

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

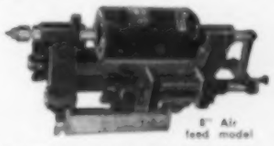
L. A. PHILLIPS President

PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 7299

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004" - .156".

Check These 9 Features



8" Air feed model

- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin

The ELECTRO-MECHANO CO.
267 E. ERIE ST. MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 7300

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST
in addition to stopping drip and keeping floors dry.

ANYONE CAN APPLY
Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

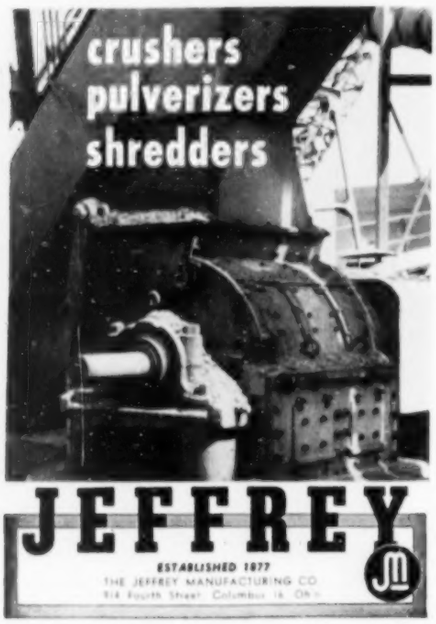
Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME_____
ADDRESS_____
CITY_____ STATE_____

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN - 7301

If you write maker identify as IEN - 7302



If you write maker identify as IEN - 7303

COMPARE

it all adds up to this..

MODINE

is tops in unit heater values

Yes, on every count, leading architects and engineers agree — Modine Unit Heaters have everything!

Performance? Choose any Modine—Horizontal, Vertical or Power-Throw—and you get uniform comfort.

Economy? Fuel bills are smaller with Modine. And installation and maintenance costs are far lower, too.

Get all the facts from your Modine representative listed in your phone book classified section. Modine Mfg. Co., 1903 DeKoven Ave., Racine, Wis.

Ask for Bulletin 1494, "Modine Unit Heating." Also available — bulletins covering special applications in commercial brooder houses, greenhouses, and milk houses.

U-1113

Modine UNIT HEATERS

FOR FACTORIES • STORES • GREENHOUSES • COMMERCIAL BROODER HOUSES • MANY OTHER APPLICATIONS

If you write maker identify as IEN - 7304

PUMP . . Pneumatic reciprocating, to deliver fluid finishing materials

Source: GRAY CO.
1012 Sibley St., Minneapolis 13, Minn.

Pivots on truck

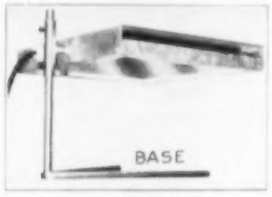
Double acting pump for operation on air pressure is combined with an air operated agitator on the removable lid of a cylindrical housing to work directly from a 5 or 10-gal. original fluid container. The housing mounts by means of trunnions in removable arrangement on a two wheel hand truck for movement from one location to another.

The equipment is particularly suited to supply paint spray guns in maintenance and in production operations. It is known as the portable heavy duty Paintmaster. The agitator blades are made of aluminum so they will not spark. They are adjustable for depth. The pump draws fluid from the container without applying air pressure in the container. Pressure is from a shop line.

If you write maker identify as IEN - 7305

DRYING . . Infra-red heater for laboratory and experimental work

Source: HERBERT PRODUCTS INC.
74-34 Jamaica Ave., Woodhaven 21, N. Y.



List is $55

Pyrex E-C radiant glass panel is assembled on a table stand to make up this new electric radiant equipment. The panel measures 12 by 12 inches. It is mounted in a steel frame with an aluminum reflector and can be set at any height from 1 to 5 in. above the work. It rides on two bars forming the base of the unit. These bars support the work above a table top so heat will not be transmitted to it.

The panel rates 1,000 watts and operates on 110-volt ac. It develops a surface temperature of 920 deg. F. and produces long waves of black heat capable of heating material that is either light or dark in color. The unit is particularly suited for use by manufacturers of paint, varnish and plastics.

Identify as IEN - 7306

Have you motley to count for packaging or plastic tokens, checks, slugs, any disc-shaped pieces without center holes to about a 25 cent piece in size? Then perhaps you can use a Klopp counting machine, either hand or power operated, to good advantage. The company will send you literature about these machines. You just shovel the work into a tray. The machine counts it into a very neat pile or, by predetermined quantity, into a bag.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7307

"Hat Press"

Operated by

NOPAK CYLINDER

Brim Laying machine employs NOPAK Model "D" 2½ x 14" Air Cylinder.

The Cuming Pneumatic Brim Laying and Flanging Machine is used by leading makers of felt and straw hats to "set off" brims . . . formerly a laborious and highly skilled hand operation.

Controlled and cushioned NOPAK Cylinder Power results in faster closing, a shorter work cycle, constant and uniform pressure. This application may suggest similar uses for NOPAK Cylinders in the machines you build for others, or use in your own plant.

GALLAND-HENNING MFG. CO., 2760 S. 31st Street, Milwaukee 46, Wis.

Write for Bulletin SW-1 or refer to Sweet's File for Product Designers.

Representatives in Principal Cities

NOPAK VALVES AND CYLINDERS

DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN - 7308

If you write maker identify as IEN - 7309

MACHINE LOADING, SCHEDULING DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to plan Assured.

Readily Adapted . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc. and McCaskey Machine Control Boards.

Write today for your copy of illustrated Bulletin A-630 IEN containing all the facts

The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS

PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN - 7310

Are you troubled by fines in injection molding?

TAYLOR-STILES PLASTIC DICING CUTTER

1. Slits, then cross cuts plastic sheets into pellets of the exact dimensions you require from 1/32" up.
2. Without fines and
3. Without need for a second cutting operation.

Concerns that had been cutting materials coarsely to avoid fines, and then cutting a second time are now saving 20% to 30% in extra time, labor, and overhead on their stock reduction operation.

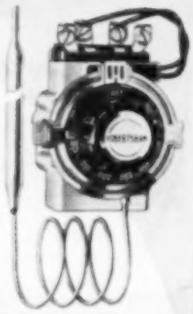
TAYLOR-STILES Company
CUTTING MACHINES & KNIVES

Write for full facts and description of the Taylor-Stiles machine for your particular plastic cutting requirements.

44 Bridge St.
Riegelsville, N. J.

If you write maker identify as IEN - 7311

a "Workhorse" for accurate, dependable temperature Control!



A ruggedly built control of great accuracy and sensitivity for a wide variety of heating applications with a maximum range of 550°F. No separate "off" switch. Mechanism actuated by hydraulic thermostatic element consisting of bulb, capillary tube and diaphragm. Write for Catalog D-1.

In Home and Industry, EVERYTHING'S UNDER CONTROL

Robertshaw THERMOSTAT DIVISION

Robertshaw-Fulton Controls Company - Youngwood, Penna.

If you write maker identify as IEN - 7312

NEW!

"QUIKUPL"*

Stainless Steel Fittings

Join Tubing or Pipe Without Threading, Flaring or Welding

"QUIKUPL" – a *completely new* stainless steel fitting – makes possible the assembling of tubing and pipe lines without threading, flaring, sweat-soldering, brazing or welding. Tubing or pipe is simply cut to length, deburred, and inserted into the fitting – tightening a small screw then completes the coupling.

Resilient sealing ring in "Quikupl" maintains squeeze fit . . . pressure in line causes positive seal between fitting and tube or pipe. Sealing ring is nontoxic to foods, and resistant to most chemicals. Couplings, tees, adapters and elbows (45° and 90°) are available from Frasse warehouse stock in Types 304 and 316 stainless steel—sizes for tube and pipe range from 1" to 4" O. D. For complete details on "Quikupl" stainless steel fittings write for Engineering Memo #7.

*Reg. U. S. Pat. Off.

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, New York

Lyndhurst Philadelphia Buffalo Syracuse

If you write maker identify as IEN - 7314

VALVE . . Pressure relief design to protect hot water equipment

Source: A. W. CASH VALVE MFG. CORP.
6612 E. Wabash, Decatur, Ill.

Ask for Bulletin 290

Type F-61 is a new valve in the company's line designed to conform with recommendations of the National Board and ASME. Application is on hot water space heating boilers, tanks, heaters. Pressure is between 30 and 125 pounds. The valve has capacity to relieve pressure due to thermal expansion of water and also due to formation of steam caused by failure of a firing device to shut off.

Construction is in bronze with a stainless steel spring, silicone seat disc and diaphragm seal between the seat and the spring chamber. The inlet is threaded for ¾ in. pipe.

If you write maker identify as IEN - 7315

SOLVENT . . Penetrating oil to loosen corroded metal assemblies

Source: TATE CHEMICALS INC.
59-63 Main St., Camden, N. Y.

List $18 for 24 half-pints

Application of a little of the new Tate's Oil to a corroded bolt, nut, hinge, cylinder head, valve, followed by a short interval to permit the oil to soak in, will result in loosening the connection so parts can be disassembled without difficulty. Sticking valves can be released in an internal combustion engine by pouring a small quantity of the oil into the carburetor and into each spark plug opening. Rust can be removed from chromium plating and from any finished metal product. Packaging is in half-pints, 24 to a case, in quarts, gallons, and in 5-gal. cans and 55-gal. drums.

If you write maker identify as IEN - 7316

VALVES . . Faucet repair kit holds washers, packings, bibb screws

Source: J. A. SEXAUER MFG. CO.
2501-7 Third Ave., New York 51, N. Y.

Handy Andy No. 100

Metal box divided into compartments and equipped with a hinged lid and locking clasp contains an assortment of 1,079 replacement parts for faucets and for a good many designs of valves to 1 in. in size. There are beveled and flat bibb washers, top bibb gaskets, bonnet nut packings and bibb screws. A bent shank tap is included to clean the stem threads to take a new screw. An index of the parts and sizes in each compartment is printed on the inside of the box cover.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7317

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •

Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence; now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN - 7318

REDUCE HANDLING of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. Stackbins—individual hopper-fronted stacking bins, slide like drawers in Stackracks — individual units which lock together to form racks of any size, shape or capacity.

STACKBINS IN STACKRACKS

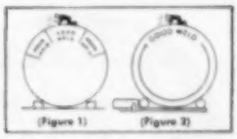
Manufactured and sold in Canada exclusively by Wickwire-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

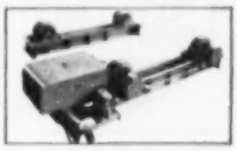
STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 7319

How Worthington Turning Rolls insure BETTER WELDS



(Figure 1) (Figure 2)



Designed for use in welding cylindrical vessels of any size, Worthington Turning Rolls will insure the best possible weld while lowering costs and increasing footage up to 50%.

The above sketches show how. Unless work is turned continuously, good downhand welding is obtainable only in a small area (Fig. 1). With a Worthington Turning Roll, downhand welding is assured for the complete circumferential seam (either by manual or automatic welding) (Fig. 2).

Write for Bulletin 210C. Worthington Corporation, Plainfield, New Jersey.

Y.2.3

WORTHINGTON

Welding Positioners—Turning Rolls

If you write maker identify as IEN - 7320

Link-Belt Car Spotters release manpower for other jobs. They speed the spotting of railroad cars for loading and unloading . . . reduce switching and demurrage time. One man, using a Link-Belt Car Spotter with motor driven capstan, can easily move up to six loaded cars at a time. Two sizes, with 5 and 10 hp motors develop 5,000 and 10,000 lb rope pulls.

Get this NEW BOOK →

Book No. 2092 gives all the facts about Link-Belt's complete line of car spotters and drum-type pullers.

LINK-BELT CAR SPOTTER

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices in Principal Cities.

If you write maker identify as IEN-7321

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN-7322

CLUE TO A SOLUTION FOR YOU?

GAST Oil-less AIR PUMP does double duty on HOMOCARB FURNACE

PROBLEM: Get a compact pump that provides both vacuum and pressure in a gas-air system required for operation of Leeds & Northrup Microcarb Atmosphere Control applied to the Homocarb Furnace equipment.

SOLUTION: One Gast Integral Oil-less Air Pump does double duty. It provides low vacuum to draw a continuous 2 cu ft. per hr. sample of furnace gas over the atmosphere detector. At the same time the pump maintains a mixture of furnace atmosphere and air at 5 to 10 pounds pressure in the system on the discharge side of pump.

RESULT: Positive displacement pump provides absolutely oil-free air, and eliminates worries about lubrication. Rotary design runs quiet and cool.

SUCH AN EXAMPLE as this may contain a clue to solving a similar or even totally different problem on your desk. You might be surprised at the innumerable applications for air pumps and air motors in the lower capacity ranges. Write today describing your original equipment problem. We'll send full details. "Air may be your Answer."

1000-ONE CATALOG IN SWEET'S FILE

Gast Application Ideas Booklet — showing 36 design problems solved — sent upon request.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS - COMPRESSORS - VACUUM PUMPS
(to three h.p.) (to 30 cfm) (to 30 inches)
GAST MANUFACTURING CORP., 828 Kirkley St., Benton Harbor, Mich.

If you write maker identify as IEN-7323

Automatically
SOUNDS SIGNALS, OPERATES EQUIPMENT ON ACCURATE SCHEDULES

Montgomery PROGRAM CLOCKS & INDUSTRIAL TIMERS

Program clocks for automatic control of signal systems, governing work periods, permitting manual operation for special programs or emergency alarms without affecting accuracy of pre-set schedule.

Industrial timers start and stop equipment automatically to a pre-set schedule. Wide application for shop and laboratory operations. Special timing equipment engineered to your requirements.

Request free specification and data sheets

MONTGOMERY MANUFACTURING CO., Owensville 8, Ind.
Please send free Industrial Timer data sheets
Name
Position Company
Address City State

If you write maker identify as IEN-7324

FILTERING . . Perforated Teflon to process corrosive chemicals

Source: UNITED STATES GASKET CO. 658 N. 10th St., Camden 1, N. J.

Resembles a screen

Perforations range from 0.02 to 0.062 in. with spacing that provides 18 to 37 per cent of open area in this new perforated Teflon tape. The tape itself ranges in thickness from 0.005 to 0.05 inch. It is available in continuous lengths and 12-in. width.

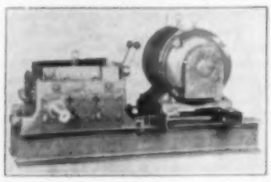
Perforated sheets are also included in the line in sizes to 24 by 24 in. with thickness at 1/8 or 3/32 in. and hole size measuring 0.033 in. or larger. Sheets to 1/8 in. in thickness, or more, also can be specified in the same sizes with holes measuring 0.045 inch or more.

The Teflon is not subject to attack by acids, alkalis or solvents with the exception of molten sodium and fluorine. It is tough, resilient, non-adhesive and will not contaminate any material being processed.

If you write maker identify as IEN-7325

DRIVE . . Four speed transmission has ratings from 10 to 60 horsepower

Source: TURNER UNI-DRIVE CO. 3402 Terrace St., Kansas City 8, Mo.



Ask for Bulletin S2-A

Three new models, No. 2004, 3004 and 5004, have been added to the company's line of multiple-speed transmissions. At the same time each is available in three drive arrangements. These include the motor mounted in solid arrangement on the transmission housing, on a hinge plate on the housing, or on an I-beam base with provision for adjustment as shown in the illustration. Hand wheels or levers are employed to select the four speeds. Minimum output speed of the slow-speed shaft, to develop rated horsepower, is 156 rpm. on Model 2004. It is 260 rpm. on Model 3004 and 291 rpm. on Model 5004 with ratings respectively at 10, 20 and 30 horsepower.

Construction employs heat-treated steel gears, cast housing and mounting parts, anti-friction bearings and magnetic drain plugs. The gears operate in oil. Grease seals prevent leakage.

Identify as IEN-7326

Slago is a new powdered material to sprinkle in a pot containing soft melted metal. The powder treats the slag to remove impurities, convert back to metal the dross of tin, lead, cadmium, antimony, zinc. Farrelloy Company will sell you six 1-lb. cans for $4.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-7327

SPEEDY AIR VISE

SPEEDS UP ✓ MILLING ✓ PUNCHING ✓ DRILLING ✓ BENDING ✓ TAPPING ✓ RIVETING

FOOT CONTROLLED!

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

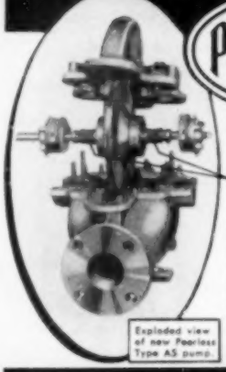
W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN-7328

THIS NEW HORIZONTAL SPLIT-CASE ALL PURPOSE PUMP HAS NO STUFFING BOX!

PEERLESS PUMPS



Exploded view of new Peerless Type AS pump

New Peerless Type AS Pump is designed around mechanical shaft seals

Write today for Peerless Pump Bulletin No. B-1350. Profusely illustrated with pump views, sectional and cutaway pump drawings, elevations and dimensional data. Mechanical shaft seals prevent water leakage, save space, cut maintenance costs, provide extra quality without a premium in price.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta, Dallas, Plainview and Lubbock, Texas, Fresno, Los Angeles, Phoenix, Albuquerque, N. M., Tulsa

If you write maker identify as IEN-7329

drill

5 to 7 times more holes in concrete

tilden

ROTARY KONKRETE KORE DRILLS

You can drill straight, clean, ready-to-use holes at speeds up to 6 inches per minute—even through steel reinforced concrete. Cuts 5 to 7 times more holes than competitive drills. Special diamond-ground, sintered carbide cutters drill up to 1,000 inches of concrete without resharpening. TILDEN factory precision resharpening is FREE! 29 standard sizes—3/16" to 4" dia.—interchangeable shanks up to 60".

PATENTED CORE SLOT EXPELS CUTTINGS AUTOMATICALLY!

U. S. Pat. No. 2506474

WRITE TODAY for free, illustrated catalog.

SOLD BY SUPPLY HOUSES EVERYWHERE

TILDEN TOOL Manufacturing Company
209 Los Molinos • San Clemente, Calif.
Branch Offices:
1144 W. Washington Blvd. Chicago 7, Illinois
1995 Fair Oaks Avenue Pasadena 3, Calif.

If you write maker identify as IEN-7330

FREE Repair Handbook

40 PAGES
170 ILLUSTRATIONS

Here are a few of the many Smooth-On repairs for plant, shop, and home found in this pocket-sized handbook:

- Sealing cracks and leaks in pumps, heaters, apparatus, piping.
- Tightening loose parts of apparatus, fixtures, tools.
- Stopping leaks in basement walls.
- Repairing cracked concrete floors.

Write for your free copy of the Smooth-On repair handbook today. The simple directions and clear pictures will help you to make hundreds of time-saving, money-saving repairs.

ONE OF THE TEN SMOOTH-ON REPAIR CEMENTS

Smooth-On No. 1, used on iron, steel, brass and other metals, is a quick hardening repair cement that comes in 7 oz., 1, 5, 20, or 100 lb. sizes. If your supply house hasn't it write us.

SMOOTH-ON

Smooth-On Mfg. Co., Dept. 1, 570 Communipaw Ave., Jersey City 4, N.J.
Please send me FREE Repair Handbook.
Name
Address
City State

If you write maker identify as IEN - 7331

Specially built to handle heavy loads

You can give hard, heavy use to Bassick "HA" Heavy-Duty Casters because they're built to take it.

Forged steel top and horn plates, unit-type heavy duty main load bearing, make this caster practically indestructible. The only limit on load capacity is the ability to move a given load on a 5 in., 6 in. or 8 in. wheel.

Put the Bassick "HA" to work *now* to reduce the "Reducible 30%" (materials-handling . . . about 30% of total cost . . . one of today's few *reducible* expenses). Write for Bulletin HA to the world's largest manufacturer of casters . . . THE BASSICK COMPANY, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

If you write maker identify as IEN - 7332

There's a MICRO Precision Switch to meet every plant application requirement

Plant engineers charged with keeping present plant equipment safe, automatic and at high production capacity, find in MICRO precision switches a wide variety of switches to meet their needs.

The MICRO line of precise snap-action switches includes heavy-duty limit switches, explosion proof and splash proof switches, high capacity switches to handle high in-rush currents, sealed plunger switches and small die-cast enclosed switches. All are available with plunger actuators, roller-plunger actuators and with roller-arm actuators. Many have both right- and left-hand mounting arrangements and may be side or bottom mounted.

MICRO SWITCH distributors are located in over a hundred key cities to supply just the right MICRO unit to meet your specific plant application need. Look for them in your classified phone book under "Switches, Electric."

MICRO MS SWITCH

FREEPORT, ILLINOIS

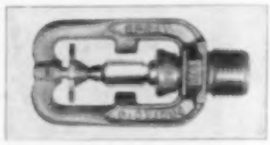
MICRO Snap-Action Switches . . . Honeywell Mercury Switches

A Division of Minneapolis-Honeywell Regulator Company

If you write maker identify as IEN - 7334

EXTINGUISHING . . Sprinkler head opens to deliver fine water spray

Source: GRINNELL CO.
277 W. Exchange St., Providence 1, R. I.



Ask for illustrated booklet

A timely divided water spray is delivered by this new automatic Protecto-Spray sprinkler head. The spray dilutes flammable vapors already present due to a fire and thus makes them unburnable. It evaporates and thus removes heat from the solid or liquid that is giving off flammable vapors. It cuts down the fuel supply and reduces the temperature of gases from the fire to help prevent spreading. These actions restrict a fire to the area of its origin and limit damage, particularly in high piles of material.

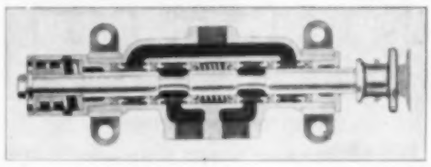
The release mechanism is a quartzoid bulb so the sprinkler head can be supplied from stock to open at any one of six temperatures between 135 and 500 deg. F. It is available on special order with bulbs to operate at steps 25 deg. F. apart between 325 and 500 deg. F. Three orifice sizes are ¼, ⅜ and ½ inch. Six cone spray angles are between 80 and 160 degrees.

The head is approved by Factory Mutual and Underwriters' Laboratories to extinguish fires in high piled material storages, protection of wall and floor openings, to extinguish and control fires in flammable liquids with flash points down to kerosene and for exposure protection of storage tanks containing compressed gases and flammable liquids. It will control and extinguish fire in oil-filled electrical equipment, oil, paint and varnish storage. It is suited for application wherever individual automatic response of a directional spray nozzle is required upward, downward or at any angle between.

If you write maker identify as IEN - 7335

VALVE . . Four way pneumatic, spring centered neutral, ¼ to 1 inch

Source: VALVAIR CORP.
949 Beardsley Ave., Akron 11, Ohio



Stops and holds a piston in any position

A spring at one end of the assembly of this new Type K in the company's line of pneumatic control valves returns the operating piston to neutral center position where all the ports are either blocked or in open neutral. The valve is made with a bronze body, stainless-steel chromium-plated stem, Hycar O-ring packings, brass spacers and cadmium plated springs.

Five sizes are equipped with ports ranging from ¼ to 1 inch. The valve can be specified for hand or foot operation or for power operation by means of air pressure or a solenoid pilot valve. Pressure capacity is to 300 lb. handling air, inert gas, oil or water and similar fluids.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN - 7336

Only the New TYPE "R" MORRIS SLURRY PUMP *has these 4 features*

1. **Gland is under suction pressure only. This feature practically eliminates packing troubles.**
2. **For dismantling, you need remove only four bolts. No internal studs or bolts . . . no troublesome fits or joints.**
3. **You can remove impeller and liner without disturbing piping.**
4. **Shell interchangeable for right or left-hand rotation. Suction and discharge nozzles can be rotated to positions in any of four quadrants.**

The New Type "R" Morris Slurry Pump handles caustic or acid mixtures containing abrasives or solids; also are concentrates, tailings, slag, residue from filters and classifiers.

Write for specifications and operation data on pumps best suited to your particular needs. No charge or obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

If you write maker identify as IEN - 7337

MAINTENANCE MEN!

GET THE FULL STORY ON HANNIFIN'S

NEW *Pilot-Master* Air Control Valves!

Fewer Valves to Stock. Some valve operates either 2-way or 3-way, normally open or normally closed. 4-way valves also available. Pilot valves for remote control.

Fewer Parts to Stock. Every moving part of main or "master" valve fits in an easily removable cartridge. NO SPRINGS! Two sizes of cartridge fit all 3 valve sizes. Pilot heads (solenoid or pressure operated) fit any size valve.

Solenoids Easily Serviced. The specially designed solenoids can be disassembled to replace the coil, or to install a coil of another voltage.

All Sizes From ¼" to 1¼" I.P.S.
Pressures From 15 to 150 P.S.I.
Write for Bulletin 231 and get the complete story!

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.

If you write maker identify as IEN - 7338

GOOD.....FOR ALL PRESSURES

Yarway Impulse Steam Traps are suitable for any pressure up to specified maximum *without change of valve or seat.* Types available up to 1500 lbs. Simplifies installation and maintenance. Over 650,000 Yarway Traps already *proved on the job.* Sold by over 200 distributors. Bulletin T—1740 free.

YARWAY Impulse Steam Trap

YARNALL-WARING CO. 122 MERMAID AVE., PHILA. 18, PA.

If you write maker identify as IEN - 7339

STRIPS WIRE CLEAN IN 2 SECONDS!

IDEAL *Stripmaster*

(Patent Pending)

6 MODELS —for all wire gauges 8 to 22—Also POS/FM and TV down lead wires.

Easier, Faster—No Cut Fingers! . . . One Light Squeeze Strips Clean . . . Can't Crush Wire. Unique in design—unique in performance! One easy squeeze strips up to 7/8 in. Exclusive "automatic" feature holds jaws open while wire is removed — positively prevents crushing. Just insert wire, squeeze and release! Weighs only 10 oz.—fits in pocket. Blade can be changed in a jiffy! See the Stripmaster at your IDEAL Distributor's or mail coupon below.

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

OTHER WIRING TOOLS (IDEAL)

- ☐ Voltage Testers
- ☐ Fish tape, reels and pullers
- ☐ Joist borers
- ☐ B-X cutters
- ☐ Fuse clip clamps
- ☐ Fuse pullers
- ☐ Test lites

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send free catalog information on Stripmaster and other wiring tools as checked.

Name _____
Company _____
Address _____
City _____ Zone ____ State ____

If you write maker identify as **IEN - 7340**

SARCO WATER BLENDERS

A 3-way mixing valve which provides any set temperature regardless of the incoming hot or cold water pressures and temperatures. Used for washrooms, process work and engine jacket cooling. Several types available; sizes ½" to 4". Cat. No. 800.

292

SARCO SAVES STEAM

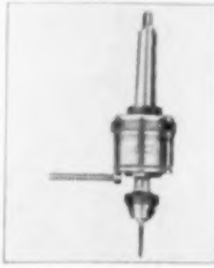
SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

If you write maker identify as **IEN - 7343**

THREADING . . Tapping head provides for free tap advance

Source: **ERIC S. JOHNSON CO.**
228-32 E. Ohio St., Chicago 11, Ill.



The tap floats axially

Two new sizes have been added to the company's SPV tapping head, previously described IEN-10266-51. The line now covers a size range from No. 0 to No. 5 in the smallest unit in the line and from 1 to 2 in. in the largest. A tap driven by this new head will cut threads as good as those on the tap itself with operation at speeds to provide 300 fpm. in light metal, 180 fpm. for brass and 90 fpm. for tool steel.

Feature in the design is assembly of the axial sliding body in two needle bearings and by providing a ball bearing connection between the driving body and the driven tap holder so the tap, upon entering the work, is free to advance axially.

Torque is transmitted through a mechanical locking device composed of steel balls and springs to limit the driving effort. A reversing device operating through a radial bearing and mechanical reversing clutch starts the tap back upon contact in the bottom of a blind hole. Rotation is then left hand for a normal right hand thread returning to right hand rotation as soon as the tap leaves the hole.

If you write maker identify as **IEN - 7347**

MEET THE NEW MODEL

Streamlined

MUCKLE VENTS

Take a look at the new silhouette . . . it's low slung and streamlined—better looking on any roof!

OLD NEW

Get away from old, "eye sore" ventilators—get the newly designed Muckle Vents. Engineered for better performance in moisture laden air — the motor is out of line of air flow. A compact, good looking, easy to install all-in-one unit to fit any roof.

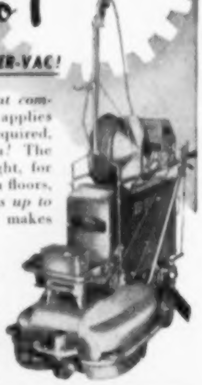
Write today for more information on Muckle Vents.

Muckle MANUFACTURING CO.
OWATONNA 33 MINN.

If you write maker identify as **IEN - 7341**

MECHANIZE 4 Scrubbing Operations into 1

with a COMBINATION SCRUBBER-VAC!



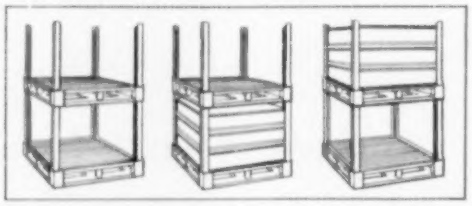
Here's a single cleaning unit that completely mechanizes scrubbing. It applies the cleanser, scrubs, rinses if required, and picks up — *in one operation!* The *self-propelled Model 213P* at right, for heavy duty scrubbing of large-area floors, has a 26" brush spread, and *cleans up to 8,750 sq. ft. per hour. Finnell* makes *Scrubber-Vac Machines* in a full range of sizes (no need to *over-buy* or *under-buy*) . . . available on either lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2607 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. FINNELL BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 7344**

HANDLING . . Four way steel pallet with corner stakes and steel sides

Source: **PHILLIPS MINE & MILL SUPPLY CO.**
2300 Jane St., Pittsburgh 3, Pa.



Typical arrangements are shown

Erect-A-Pallet is a new assembly in sizes measuring 40 by 48 in. and 48 by 48 inches. It has individual load carrying capacity of 2 ton. It can be tiered, when its four corner stakes are employed, for a capacity of 8 ton. It also can be converted into a box when its corrugated steel sides are slid into place on the corner stakes.

Identify as **IEN - 7345**

Mask trade names a new Duncan-West liquid deodorant. Add a few drops to a bucket of paint or enamel and the fresh paint odors will disappear. Rooms, as in a hospital, can be reoccupied in about three hours after the painter has departed. Addition does not affect other properties.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7348**

SAVE UP TO 85% ON TOOLS—MACHINERY AND PARTS!!

1952—230 PG. CATALOG

Our latest & biggest CATALOG of NEW and SURPLUS BARGAINS. Thousands of items at UNHEARD OF LOW PRICES! SAVINGS UP TO 85% in Hand & Power Tools, Electrical Supplies, Industrial Machinery, Gas & Electric Motors, Winches, Hoists, Machine Tools, Gauges, Welding Equipment, Pneumatic & Air Tools, Raw Stocks, Aluminum, Brass, Copper & Steel in Sheets, Bars, Rods, Tube & Extrusions, Nuts, Bolts, Rivets, Screws, Wire, Cable & a Huge Stock of HYDRAULIC SUPPLIES including Cylinders, Valves, Pumps, Motors, Fittings, Tubing, etc. While these items last we will continue to sell them at typical low Palley Prices. WRITE TODAY FOR YOUR COPY!

WAR SURPLUS SAVINGS

Stationary or Portable ARC WELDER 97.50

HYDRAULIC PUMP & CYLINDER SPECIALS

Hyd. Variable Displacement PUMP 32.50

Special!! HYDRAULIC CYLINDER 29.95

P-3 STRATO POWER PUMP 19.50

No. 3 HYDRAULIC CYLINDER 5.75

P-4 VICKERS ANGLE PUMP 19.89

FOUR WAY VALVE 9.75

PALLEY SUPPLY CO. Dept. IN-7 6321 SAN FERNANDO RD. GLENDALE 1, CALIF.

Order from this ad. All sales final. All prices F.O.B., Glendale. Pay by M.O. or check. P.O.'s accepted from D.&B. firms. ⅓ deposit with C.O.D.'s.

If you write maker identify as **IEN - 7342**

PRECISION PARTS OUTPUT AT PEAK WITH SPEED-TROL

Speed-Trols on our spring forming machines permit maximum production for each type of precision mechanical spring we manufacture. With Speed-Trol's fingertip control of speed and infinite speed variation we can quickly and accurately select the best production speed for each spring design and type and size of wire used ... and Speed-Trol's positive pulley adjustment accurately maintains any selected speed, reports Henry R. B. Irish, Secretary, The Timms Spring Co.

STERLING SPEED-TROL

OUTSTANDING FEATURES:

Infinite speeds — positive speed regulation — fingertip control — large indicator — positive pulleys — no springs — belt tension in proportion to load — protected — streamlined — Herringbone Rotor — through ventilation — versatile mounting — NEMA dimensions — shock absorbing — quiet operation — rugged — compact — dependable — long life.

70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. **B-127.**

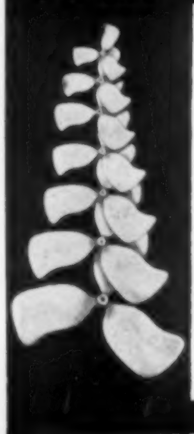
STERLING ELECTRIC MOTORS

Plants: New York City 51; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

If you write maker identify as **IEN - 7346**

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved—Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

EIGHT SIZES

Kloppenborg Fan Blades are made in 8 sizes—from 12" to 30"—and are rated at 1750 RPM to delivery approximately from 1255 to 14,500 CFM. They are bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

If you write maker identify as **IEN - 7349**

"GUNITING" with *Super* ADACHROME-CAST

. . SAVES OUTAGE TIME and MONEY

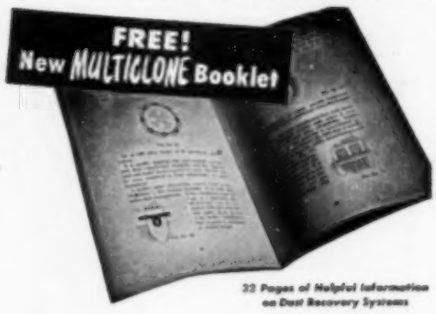
Use SUPER ADACHROME-CAST to gunite your stud tube water walls.—Fine-grained to penetrate the small apertures between studs,—packs to a dense mass when shot. One user reports SUPER ADACHROME-CAST lasted twice as long and took but one-third the time to apply as compared with a plastic chrome ore installation.

Excellent for coating brickwork when free of slag.

Yours, *FREE* for the asking . . . an illustrated, detailed Bulletin on *Super* ADACHROME-CAST.

BOTFIELD REFRACTORIES CO.
784 South Swanson Street, Philadelphia 47, Pa.
In Canada, Canadian Botfield Refractories Co., Ltd., 171 Eastern Avenue, Toronto

If you write maker identify as IEN-7350



22 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency... how to simplify your installations... how to conserve valuable plant space... how to get high recovery over a wide range of particle sizes, etc. **A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.**

WESTERN Precipitation CORPORATION

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. LaSALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN-7351

Preferred power on portable fire fighting pumps and floodlight electric plants — the world's most widely used single-cylinder gasoline engines on machines, tools, appliances used by municipalities, industry, construction, railroads, oil fields, and on equipment for farm and home.

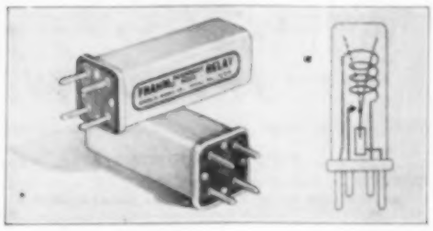
The product of more than 32 years of air-cooled power experience — Briggs & Stratton single-cylinder, 4-cycle, air-cooled gasoline engines are preferred for every application demanding the most in dependable performance. Briggs & Stratton Corporation, Milwaukee 1, Wis., U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

If you write maker identify as IEN-7353

RELAY . . Resonant reed design responds to selected ac. frequency

Source: JAMES G. BIDDLE CO.
1314-18 Arch St., Philadelphia 7, Pa.



Characteristics, illustrations in Bulletin 33-19

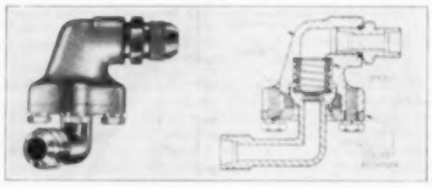
Type RR-1 designates a new resonant-reed relay in which the reed is tuned so it will respond only to a signal having frequency within a narrow range. In an overall range between 200 and 500 cycles the relay is available for operation on 16 channels with no interference between adjacent ones. Thus it is possible to mount as many as 16 relays on a single control circuit over which any of the control frequencies can be transmitted.

The relay responds, after a few cycles, by closing its contacts for a fraction of each cycle. This duration ranges from 5 to 20 per cent of the normal period of the relay. Contacts rate to 0.75 amp. on 220 volts. Operating power is in a range between 20 milliwatts and 1 watt. Assembly is in a metal housing with a pin-type base to mount in a Cinch No. 9804 crystal socket. Seated height is 2¾ in. above the chassis.

If you write maker identify as IEN-7354

PIPE FITTING . . Swivel joint, hydraulic pressure to 3,000 pounds

Source: BARCO MFG. CO.
1804 W. Winnemac Ave., Dept. J-11, Chicago 40, Ill.



Illustrated data in Catalog 269

Ball shaped head is held against a non-metallic seat by spring action inside the housing of this new swivel joint to permit swivel action and also to compensate for misalignment between the inlet and outlet connections. The joint is available in five sizes between ¼ and ⅝ in. for use in tube lines or in equivalent sizes of pipe. Pressure rating is to 3,000 lb. with steel or aluminum housing and a stainless-steel ball. The joint will operate satisfactorily in a temperature range between minus 100 and plus 500 deg. F.

Swivel action is through 360 degrees. Swing for alignment is through 15 degrees. The gasket in which the ball head seats is made of a chemically-inert material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7355

ALLIGATOR

CONVEYOR BELT LACING

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Stainless or Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width.*

Order from Your Supply House. Ask for Bulletin A-60

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

If you write maker identify as IEN-7356

MERCURY

A-310 TRAILER

Corrugated box body

Steel dump body

***Standardized* for economy**
***Flexible* for every need**

Basic design, materials, fabrication of the A-310 Trailer have been standardized through years of rigorous testing under severe industrial service. Sizes, deck specifications, body types and superstructure are flexible to the requirements of each individual user. Wheel type and coupling system are optional. The result is the Mercury A-310 Trailer . . . standard of industry for efficient, low-cost, load carrying service. For complete details write for Bulletins 160 and A999.

MERCURY
FORK TRUCKS · TRACTORS · TRAILERS

MERCURY MANUFACTURING COMPANY
4132 So. Halsted St., Chicago 9, Ill.

If you write maker identify as IEN-7357

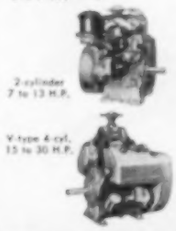
SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN-7358

to Fit the Job and Fit the Machine

WISCONSIN *Air-Cooled* ENGINES



Single cyl. 3 to 9 H.P.

2-cylinder 7 to 13 H.P.

V-type 4-cyl. 15 to 30 H.P.

Because Wisconsin Air-Cooled Engines are supplied in a complete power range, from 3 to 30 H.P., there is an ideal size to fit all types of machines and power applications within this range, without wasted power and with maximum power service benefits. Heavy-duty construction, combined with extremely compact design and light weight are added advantages — and dependable AIR-COOLING permits trouble-free service under all climatic conditions.

Specify Wisconsin Heavy-Duty Air-Cooled Engines for the utmost in power satisfaction. Write for descriptive data.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 7359

Specify **T-J** **FOR MORE WORK BETWEEN GRINDS**

In die and forge shops everywhere . . . T-J Die Sinking Milling Cutters are today's top favorites . . . because they're "tops" for cutting tough die steels! T-J Cutters hold a sharp edge longer on job after job . . . less breakage! Made from an extremely high grade steel . . . properly machined . . . scientifically heat-treated and accurately ground. Wide range of styles and sizes. Send for new catalog 150. The Tomkins-Johnson Co., Jackson, Mich.

FOR TOUGH JOBS SPECIFY T-J
TOMKINS-JOHNSON

If you write maker identify as IEN - 7360

MODERN TIME AND COST SAVERS BUILT BY... *Standard* GRAVITY & POWER CONVEYORS

SAVE TIME LOADING — UNLOADING WITH THE

E-X-T-E-N-D-O-V-E-Y-O-R

This compact, mobile, easily maneuverable power belt conveyor unit extends to 46 ft. in other direction and retracts to 9 ft. 10 in. Reaches into cars, trucks, trailers. Handles boxes, bags, bundles, cartons, crates, cases weighing up to 150 lbs. Available in two models — 1 way stretch and 2 way stretch — and 4 sizes. Write for Extendoveyor Bulletin— Dept. IEN 752

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 7361

GREENLEE Hydraulic Benders ...via Graybar

Make smooth quick bends ... in a matter of minutes

Now, you can make tailor-made conduit bends right on the job. Compact and easily portable, the Greenlee hydraulic bender makes precision bends in conduit (up to 3" diameter). Bends can be made cold—without use of heat or filler.

One-man operation of Greenlee benders permits time-savings of up to 60%... eliminates the extra cost of manufacturer-fabricated bends and fittings. Benders have a built-in safety valve that blows out when pressures exceed the capacity of the power unit.

For complete information on Greenlee hydraulic conduit bender, check with your local Graybar Representative. *Graybar Electric Co., Inc. Executive offices: Graybar Building, New York 17, N. Y.* 226-127

Call Graybar *first* for . . . *Everything Electrical* GraybaR ELECTRIC COMPANY

NEWS NOTES **INFORMATION**

If you write maker identify as IEN - 7362

ADHESIVES . . Instructions for use on resin glues for laminating wood in marine application

Borden Co.
350 Madison Ave., Room 430, New York 17, N. Y.

Military specifications are followed by the instructions given in new 8-page "Casco Service Bulletin 87" on "Cascophen" resin glues to laminate oak or fir. They cover storage, mixing, working life, condition of lumber, spreading, assembly time, pressing, curing. There is a list of troubles encountered in wood laminating with suggested possible causes.

If you write maker identify as IEN - 7363

BEARINGS . . Suggestions on babbitting are presented in new pocket-size information booklet

Federated Metals Division
120 Broadway, Room 1043, New York 5, N. Y.

Bulletin 146, 12 pages, carries the title of "Hints on Babbitting Practice." These hints are presented in the form of concise suggestions dealing with common causes of bearing failure, selection of the proper bearing metal, procedure for preparing and pouring babbitt bearings, installation and maintenance. Properties are summarized for three of the company's bearing alloys.

If you write maker identify as IEN - 7364

CALCULATING . . How to do it fast is shown by shortcuts described in new instruction book

M. Buten & Sons
1832-36 South St., Philadelphia 46, Pa.

"Fast Figuring for Executives" titles new 32-page pocket instruction book, list price $1, on quick calculation methods you can use in any work that involves figures. It shows how to add by grouping numbers in tens and twenties, how to subtract by adding complementary numbers, how to multiply by adding, how to divide by multiplying reciprocals. One chapter tells how to check other computations.

If you write maker identify as IEN - 7365

CALCULATING . . Friction loss in pipes for thin and viscous liquids determined by new slide rule

Foster Pump Works Inc.
48-52 Washington St., Brooklyn 1, N. Y.

First step in using new "Head Loss Computer" is to set pipe diameter under discharge rate at two scales. Then head loss can be read at a third scale against viscosity. The cardboard slide calculator, list price $1, covers liquids from water to those with viscosity of 500,000 ssu., includes provision for correction, resistance of valves and fittings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 7366

BACKED UP by GEARS FROM STOCK

Even when you specify such phenomenally long life gear sets as Cone-Drive double enveloping gearing, it helps to know that if you ever need replacements you can get them —*from stock!*

Make sure of that by specifying *STANDARD* Cone-Drive gear sets and reducers.

They will also give you these "plus" advantages:

- **Smaller center distances**
- **Up to 2/3 less weight**
- **More teeth in contact**
- **Lower overall cost**

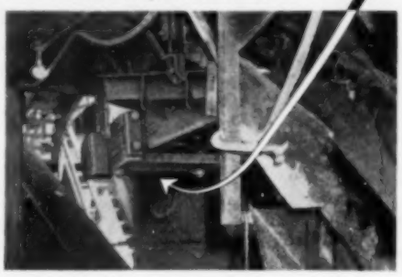
STANDARD Cone-Drive gear sets come in ratios from 5/1 to 70/1; will handle loads from fractional to over 800 hp. Write for specifications.

CONE-DRIVE GEARS *Division, Michigan Tool Company*
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS 7021 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN - 7367

SYNTRON **VIBRATORY FEEDERS**

With Variable Control of Rate of Flow



Handle most types of bulk materials — abrasive, fine and lumpy — hot or cold — dry or damp — at variably controlled rates from pounds to hundreds of tons per hour to crushers, driers, belt conveyors, etc.

Write for FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 7368

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ½". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-73 Direct hardness readings on copper, brass, etc.

WEBSTER INSTRUMENT Inc. DEPT. N. 11856 Mississippi Ave. LOS ANGELES 25, CALIFORNIA

If you write maker identify as IEN - 7369

Bendix-Friez **THERMISTORS**
(NEGATIVE TEMPERATURE COEFFICIENT) CERAMIC RESISTORS

• These temperature responsive resistors are useful as temperature measuring elements and as liquid level sensors; they are especially well suited to compensation where the circuit constants must be maintained irrespective of temperature changes. Since they are a fired ceramic, they are stable under practically all conditions and respond only to temperature changes.

Typical application in capsule form for temperature sensing of hydraulic oil.

Many other values can be obtained from standard diameter material. Because the thermistors are made in our own plant, under extremely careful control, special compositions, shapes, and resistance values, hermetically sealed or otherwise protected, can be made in any quantities to suit your individual requirements.

We invite your Inquiries Write Dept. H

BENDIX-FRIEZ STANDARD ROD TYPES

Size (inches)	@ +30°C.	@ 0°C.	@ —30°C.
.140 x ¾	45 ohms	88 ohms	193 ohms
.040 x 1.5	14,000 ohms	29,946 ohms	74,676 ohms
.018 x 1.5	40,000 ohms	94,040 ohms	262,400 ohms

FRIEZ INSTRUMENT DIVISION of Bendix
1334 Taylor Avenue • Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Ave., N.Y. 11, N.Y.

If you write maker identify as IEN - 7370

New Exact Weight Models for Unknown or Catch Weights . . .

EXACT WEIGHT Scales announce a complete line of new automatic fan dial scales for unknown or catch weighing — five types and twenty-three models, in capacities from 1 lb. to 40 lbs. Equipment is available in both metric or avoirdupois as desired. These scales are manufactured to the same high standards of all EXACT WEIGHT Scales to give you greater accuracy, dependability, and long lasting service in hard industrial use. The new line is highly flexible and adaptable to many varied applications. New literature giving full specifications of all models as to weighing capacity, dial markings, type of commodity holders and beams is ready for mailing. Write for your copy, either for immediate use, or for your files.

EXACT WEIGHT SCALES
Industrial Precision

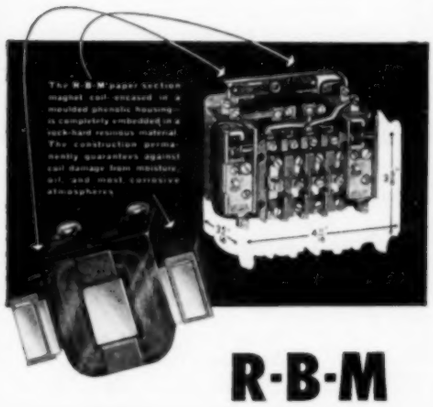
THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 7371

VISIBILITY

ACCESSIBILITY

COMPACTNESS



R-B-M

AC MAGNETIC STARTERS

The R-B-M melamine arc chamber extinguishes the arc of loads far in excess of maximum ratings, without impairing the accessibility of the stationary and movable contact assemblies.

A quick glance immediately shows which overload has tripped.

R-B-M puts more usable contact material at the center of arcing to provide greater wear before replacement.

Magnet and coil assembly, as well as stationary and movable contacts, can be removed independently of other components by using only a screwdriver and without disconnecting external wiring.

Write Dept. L-7 for Bulletin 605

R-B-M DIVISION
ESSEX WIRE CORP.
Logansport, Indiana

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 7373

BEARINGS . . Use of nylon parts in ball bearings is told in technical article reprint

Schatz Mfg. Co.
1949 The Fairview, Poughkeepsie, N. Y.

F. W. Recknagel, company's chief engineer, wrote an article in the technical literature recently. It now is available in 8-page reprint form under the title, "Why Nylon Parts Are Well Suited for Ball Bearings." Topics include reasons for nylon as race material, nylon grease seals, operating data.

If you write maker identify as IEN - 7374

BUILDINGS . . Aluminum window specifications cover materials, strength, air infiltration requirements

Aluminum Window Mfrs. Association
74-A Trinity Place, New York 6, N. Y.

1952 Specifications have been issued in 24-page booklet form for double-hung, casement, projected, awning-type aluminum windows made by Association member manufacturers. These specifications are presented in both short-form and detail manner for individual window types. Manufacturers are listed under each type.

If you write maker identify as IEN - 7375

BUILDINGS . . Design suggestions in bulletin on wind and earthquake resistant buildings

Detroit Steel Products Co.
3129 Griffin St., Detroit 11, Mich.

"Seismic Building Design" titles new 10-page bulletin based on the use of the company's Fenestra cellular sheet-steel building panels to stiffen buildings against wind and earthquake. Information includes test results, design and welding recommendations, sample calculations, detail drawings.

If you write maker identify as IEN - 7376

CASTINGS . . Technical article preprints on aspects of producing leak-tight copper alloy castings

Brass and Bronze Ingot Institute
306-10 W. Washington St., Chicago 6, Ill.

Research work sponsored by the Institute is reported in one of two technical article preprints available on request. It covers effects of mold materials on leak tightness and mechanical properties of 85-5-5-5 and 81-3-7-9 copper-base alloy castings. A similar paper describes effects of gating practice on leak tightness for these alloys. Copies are available upon request.

If you write maker identify as IEN - 7377

CHEMICALS . . What the company makes from the brines in Searles Lake is shown in bulletin

American Potash & Chemical Corp.
3032 W. Sixth St., Los Angeles 54, Calif.

Soda ash, salt cake, potash, borax, boric acid, bromine, lithium are among the 29 chemical products produced by the company at its Trona plant. How this is done is described by new 28-page bulletin, available on request, which includes 4-page schematic flow diagram. Accompanying text reviews high spots of the process, uses, community life in the desert.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 86

If you write maker identify as IEN - 7378

WHEELS GRIND BETTER... LAST LONGER

with a NEWMAN *Emery Wheel* DRESSER

Don't risk breakdown of expensive dies due to checks. Newman Dressers, designed to dress any wheel, completely free hand, giving you cooler grinding, positively eliminating checks!

Your Newman Dresser pays for itself in no time. Tests prove you get approximately 70% more grinding per trim!

*See your Distributor or write for details.

*Territories Available

ALL NEW, simplified construction permits low cost.

ONLY $15.50 f.o.b. Oakland

Replacement wheels available at $1.35 ea.

Also dressers for cylindrical grinding.

L. NEWMAN
1001 24th ST. - OAKLAND 7, CAL

If you write maker identify as IEN - 7379

Ask for demonstration or FREE BOOKLET.
Submit your tacking problems, with specimens.

A. L. HANSEN MFG. CO. 5851 Ravenswood Ave. CHICAGO 40, ILL.
Distributors in principal cities.

If you write maker identify as IEN - 7380

Today's Answer to Tramp Iron Hazards

DINGS NON-ELECTRIC ALNICO PERMA*-PULLEY

REMOVING damaging tramp iron the Perma-Pulley way brings you a combination of advantages unmatched by any other tramp iron separator:

- **Automatic** — unaffected by power failures, requires no attention. Just install it and forget it.
- **No Maintenance** — no wiring, no electrical accessories to require repairs or replacement.
- **No Operating Cost** — pays for itself in power savings.
- **Magnetic Permanence Guaranteed** for the life of the installation.
- **Powerful** — Tremendous surface strength means positive tramp iron removal.

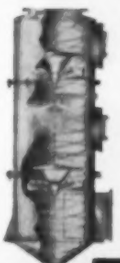
Simple to install, lightweight, made of the highest grade Alnico, the Perma-Pulley is backed by over 50 years' experience in the design and manufacture of magnetic separators by Dings for all industry. Write for catalog.

DINGS MAGNETIC SEPARATOR CO.
4755 W. ELECTRIC AVENUE
MILWAUKEE 14, WIS.

Dings
*Registered Trade Mark

If you write maker identify as IEN - 7381

CONTROL dust with DUCON WASHERS



Superior design and exclusive features, including wet suppression, result in the most economical and efficient control of dust and fumes.

Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.

In addition to use for washing of air and gases, DUCON Centrifugal-Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.

Construction: steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for Bulletin CW 48-1

The DUCON Co.
MINEOLA, N. Y.

If you write maker identify as IEN - 7382

CARTER GUIDE LINE LIGHTS

NEWLY DESIGNED to Cut Costs *Still More!*

AS ALWAYS . . . Carter Guide Line Lights throw a straight black shadow line across your work for quick, accurate straight line sawing.

BUT NOW . . . there's a new type 1000 watt bulb that means even longer service—1/3 greater lumen output. And you can now get *from 1 to 5 shadow lines*—making the Carter Light ideal for gang rips.

Write for free illustrated folder.

CARTER PRODUCTS COMPANY, INC.
420 Wm. Alden Smith Bldg.
30 Iona Avenue, S. W.
GRAND RAPIDS 2, MICH.

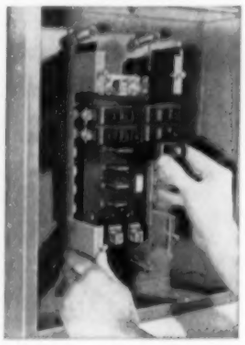
Carter

CUTS COSTS WAY DOWN!

If you write maker identify as IEN - 7383

NEW CLASS I PANELBOARD

IS *FIRST* WITH PLUG-IN BREAKER



Trumbull's new line of NLTQ Panelboards introduces the first *plug-in* circuit breaker with quick-make, quick-break. Also: thermal-magnetic protected, physically interchangeable breakers.

OTHER NEW FEATURES

Interior—spring mounted, self-aligning.
Molded-in-plastisol busbar and stab assembly.
Sequence phasing—in all sizes.
Write for Bulletin TEB-14

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
Plainville, Conn.

If you write maker identify as IEN - 7384

PROTECT YOUR PRODUCTS DURING SHIPMENT *with*

S-S-White PLASTIC DUMMY SHIPPING PLUGS AND CAPS

Made of tough, non-brittle plastic. Available from stock molds in a wide range of sizes. Details in BULLETIN P-4601. Copy mailed on request.

CONTRACT MOLDING *in all standard thermoplastic and thermosetting materials*

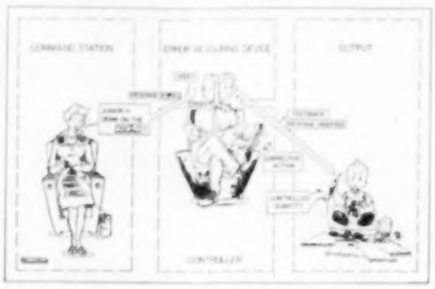
THE S-S-White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP, 10 East 40th St.
NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 7385

CONTROLS . . Ma commands, Junior "obeys."
Pa supervises Junior in the Servomechanism family

Arma Corp.
252-56 36th St., Brooklyn 32, N. Y.



Do you realize that every time you check up on Junior to see how well he is obeying Ma's order you are doing exactly what a servomechanism does? This point was brought out in a talk by Julius Y. Kaplan of the company's Servo Section.

The illustration shows a simple analogy between your family setup and that of the basic elements in a servomechanism. As time goes on you will encounter more and more of these controls on machines and processes in your plant.

Mother is the first of the four functional elements blocked off in the illustration. She is the command station to set up the order, "Junior! Draw on the paper!" Junior himself is the output with his crayon the controlled quantity.

You as Father combine the two control functions between Mother and Junior. As the error-measuring device you compare the response desired by Mother with the response observed in Junior. As the controller you apply corrective action in proportion to error between Mother's command and Junior's response (feedback) to keep his crayon on the paper.

Troubles appear in this setup as in any servomechanism control arrangement. Accuracy and gain, hunting, damping and external disturbances are examples. Accuracy soon is self-evident so that error may be kept small only by means of high controller gain. In other words, you must react strongly to the slightest deviation by Junior.

Hunting results from the controller having inertia. Thus your action to correct an observed error will be delayed somewhat to persist after the error has been eliminated. Poor Junior now is in the position of having his crayon in proper location and yet still being chastised. As a result he continues to move his crayon across the paper looking for an approved location. By the time you have halted your corrective action, Junior's crayon is off the other side.

This new error starts the cycle all over again, resulting in the crayon moving back and forth across the paper and floor in the oscillating movement known as hunting. If the controller gain is high, the oscillation may be quite violent and cause damage to the output, a bit rough on Junior.

Damping in some form can be provided to prevent this oscillation, as for example your anticipation of delays in Junior's response. Such damping would be something like the electrical anticipation networks used in servomechanisms.

External disturbances, such as grandparent or in-law interference, tend to upset the standard response and control action between you and Junior in compliance with Mother's command. These can be removed by shielding, isolating or other methods of elimination as circumstances permit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7386

KLEMP Floorsteel "PATHS"

make materials handling EASIER!

Roll flexible Floorsteel out like a rug over your present floor . . . fill its rugged steel grid with concrete or mastic . . . and you have a solid, level, enduring "path" that the heaviest loads roll over, easier. Cracks, ruts and potholes will never snag your truck wheels again! Floorsteel stays smooth, quiet and non-skid, for loads rest on its exposed **steel** edges—not on the concrete. Easy to lay, maintenance-free. Send for our informative, illustrated bulletin today!

Ask about Klemp Hastoel heavy-duty surface armor.

KLEMP METAL GRATING CORP.
Steel Flooring Specialists
6605 S. MELVINA AVENUE • CHICAGO 38, ILLINOIS

If you write maker identify as IEN - 7387

A complete variable speed power plant in single unit

Combines motor, REEVES speed varying mechanism, and speed reducer in one, space-saving unit.

REEVES VARI-SPEED MOTODRIVE

To new machines or old, REEVES Vari-Speed Motodrive brings all the benefits of stepless speed adjustability. Available with any standard, constant-speed, foot-type motor—no special motors to stock. Horizontal and vertical models, 1 to 25 hp; 2:1 through 6:1 speed ratios; fractional hp sizes in speed ratios through 10:1; manual or automatic controls. Assures *positive, accurate* speed changes without stops—easily applied to machines in service—proved in 300,000 installations. Send for free catalog No. IN 72a-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN - 7388

A Paid News Advertisement By Byron Jackson Co.

BJ SUBETTE PUMP . . .

a smaller version of the highly successful BJ Submersible Deepwell Pump

For over 23 years BJ Submersible Deepwell Pumps have proven themselves in thousands of installations. Now the Subette extends the BJ Submersible application to wells as small as 6" ID. An ideal pump for primary water supply or stand-by use in industrial plants.

Since sealed pump and close-coupled electric motor operate submerged in the well, no expensive pump house or installation is required . . . crooked or extra deep wells are no problem . . . underground location is safe from sabotage . . . no motor floodout during emergency conditions of fire or flood . . . operation is silent, invisible . . . and there is no water contamination from dirt, oil or foreign matter.

The BJ Subette provides capacities to 130 gpm and heads to 765 feet.

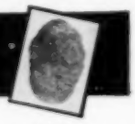
Larger BJ Submersible models are also available for greater capacities.

Byron Jackson Co.
PUMP DIVISION
P. O. Box 2017, Terminal Annex
Los Angeles 54, California

OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 7389

YOU CAN'T MATCH IT ANYWHERE!



Like a finger print, there is no matching a Viking Rotary Pump. There are a lot of pumps that look like Viking but none are built like Viking.

Insist on the genuine "gear-within-a-gear" Viking . . . the time-proved, dependable, quality-built pump that out-performs all substitutes.

Building for over 40 years the now most copied of all rotary pumps, assures you of receiving the pump that can't be matched anywhere.

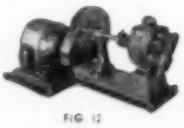


FIG. 12

VIKING AN HONORED NAME IN PUMPING

For additional information ask for bulletin 255F today.

Viking PUMP COMPANY
Cedar Falls, Iowa
Ask for Catalog No. 1-W-255F

If you write maker identify as IEN - 7390

Light **IN WEIGHT...**

Right **IN PRICE!**

AO R9100 TYPE RESPIRATOR

The low cost of this BUREAU OF MINES APPROVED Respirator has always appealed in dusty operations where a soundly made respirator of simple construction is adequate.

It protects against *pneumoconiosis-producing* and *nuisance dusts* such as aluminum, borax, carbon, cement, charcoal, coke, flour, glass, grain, graphite, gypsum, limestone, pollen and wood. Companion respirator R9100T should be specified for dusts not significantly more toxic than lead, such as barium, cadmium, lead arsenate, manganese and organic dusts—also for protection against DDT and insecticide sprays of similar potency. Your nearest AO Safety Products Representative can supply you.

American Optical
SAFETY PRODUCTS DIVISION

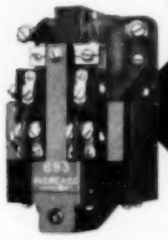
Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN - 7391

DEPENDABLE TIMING!

PNEUMATIC
ELECTRONIC

Do you want accurate and dependable timers that are easy to adjust, take small space, and serve many industrial control timing needs? Try these time-tested and proved Cutler-Hammer Timers.



CUTLER-HAMMER BULLETIN 10337 A.C. PNEUMATIC TIMER

We designed this pneumatic timer to cover many of your industrial control timing needs. You can use it on machine tools, conveyors, automatic processing, etc. You will like its small size, 2¼ wide by 4⅛ high, especially where space is at a premium. You can adjust the timing with a screwdriver, from the front. 8 turns of the screw give the entire timing range, from 0.3 seconds to 60 seconds. Reset is practically instantaneous. You can get this timer with one or two timing steps. The two timing steps eliminate the need of one timing relay, and they are independently adjustable.

CUTLER-HAMMER BULLETIN 13522 GENERAL PURPOSE ELECTRONIC TIMER

When you need short or very accurate timing, use this electronic timer. If you want a wide timing range, from 0.15 seconds to 60 seconds, get the standard unit. If you want shorter time settings or narrower ranges for special uses, give us the particulars. The timing adjustment is made by turning the knob of the potentiometer rheostat which has a plainly marked graduated dial. You can mount the rheostat inside the timer case or any place on the machine away from the timer. We build these timers with a heavy duty industrial type relay in the timing circuit. You will like the extreme accuracy of the timer on repeat conditions and in varying air temperatures.

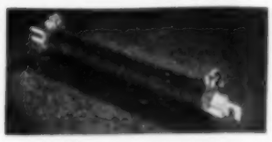
For further information on either timer, write CUTLER-HAMMER, Inc., 1378 St. Paul Avenue, Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

CUTLER-HAMMER
MOTOR CONTROL
C-H

If you write maker identify as IEN - 7393

RESISTOR . . Edge wound design, current ratings from 18 to 108 amperes

Source: OHMITE MFG. CO.
4823 Flournoy St., Chicago 44, Ill.



High heat dissipation

Powr-Rib trade names a new resistor in which the element is a ribbon of resistant alloy. It is edge wound on a ceramic insulator that is divided into 5 sections to provide required flexibility and resistance to shock and vibration. A longitudinal slot on the mounting bar permits the mounting center to vary between 16¼ and 17 in. so the new resistor can be applied in place of other standard edge wound designs.

Resistance value ranges from 0.1 to 2.85 ohms rated at 375 deg. C. temperature rise on the ribbon. The resistor is designed for high current duty in intermittent and continuous application. It is suited for use in original equipment or for replacement in existing installations.

If you write maker identify as IEN - 7394

PROTECTING . . Barrier rope to mark restricted hazardous areas

Source: PLYMOUTH CORDAGE CO.
51 Court St., Plymouth, Mass.

It signals and obstructs

Chemical resistance characterizes a new light weight barrier rope made of polyethylene plastic to mark off restricted hazardous areas in chemical plants for worker protection. The rope is resistant to attack by acids, alkalis, mildew and rot. It is being made in a ¼-in. size running 90 ft. to the pound.

Colors are red, white, black, yellow, olive or any desired combination of those named. Construction is in undrawn filaments for good elongation and to discourage use of the rope for purposes other than to mark off the dangerous areas.

If you write maker identify as IEN - 7395

DRILLING . . Portable electric tool, universal motor, for production use

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.

List is $46

Any one of seven no-load speeds can be specified for this new ¼-in. portable electric drill. Minimum is 600 and maximum is 5,000 rpm. The drill is available with a pistol grip, spade handle or a center contour handle to meet various requirements on a production line. Weight ranges from 3½ to 4 lb. in the aluminum housing. Operation is on 110 or 220-volt ac. or dc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7396

Protects ANY SURFACE

Your plant and equipment need protection from moisture, acids, corrosion and deterioration to insure economical operation. Ruberoid Rapid Asphalt Paint provides this protection in a hard gloss paint that is easy to apply with brush or spray. Wood, metal, masonry, coated fabrics and other surfaces last far longer when there's an asphalt finish to take wear and abuse. It dries quickly and one application gives lasting service.

Ruberoid Rapid Asphalt Paint is utilized in innumerable equipment, electrical and industrial applications, such as cables, switch boxes, electric motors and generators, boilers and engine rooms, iron grills, fire escapes, damp-proofing concrete, etc. Rapid Asphalt Paint comes in handy drums, barrels and cans in six different sizes from one pint to 55 gallons. For detailed literature, write The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 7397

Be fresh... Stay fresh

wear a

DUPOR No. 4

THE RESPIRATOR FOR DUST, FUMES, PAINT SPRAY

Double filters provide easy breathing. Soft rubber face mask gives air-tight fit. Sanitary face cloth protects against dermatitis or chafing. Has patented DUPOR valves for "controlled breathing," and panorama view without blind spots. A prime favorite for years!

Sample sent
$2.00 pp

H. S. COVER, South Bend, Ind.

If you write maker identify as IEN - 7398

Man alive! This Hydraulic Jack DOES EVERYTHING but walk and talk!

It's *no ordinary* hydraulic jack . . . this is a *"Porto-Power"!* Its compact, *remotely-controlled* ram is threaded for fast assembly with ingenious attachments . . . to push, pull, clamp, press, bend or spread . . . over any span, any angle!

Every maintenance crew needs this *Porto-Power* SELF KIT

Replace slow, dangerous, damaging maintenance methods! The 10-ton hydraulic unit and attachments save up to 9 man-hours moving a single machine. Pull pulleys; push out pins, bushings, bearings; bend rails; clamp—do "1001" other tough jobs!

Buy from leading supply houses. Write for "Porto-Power" catalog.

BLACKHAWK

BLACKHAWK MFG. CO., Dept. P-1572, Milwaukee 1, Wis.

If you write maker identify as IEN - 7399

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 7400

DELAVAN TYPE WS
SPRAY NOZZLE
—ideal for unusual spraying applications:

Cooling Towers
Brine Sprays
Degreasing
Bonderizing

and many other industrial uses.

WRITE TODAY FOR
Catalog No. 31

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

If you write maker identify as IEN - 7401

Production increased . . . accidents decreased with

HYPRESSURE **Jenny** steam cleaner

Here are actual savings reported by four prominent manufacturers* who switched from hand cleaning to Hypressure Jenny Steam Cleaning.

MACHINE	Hand Cleaning	Hypressure Jenny Steam Cleaning	Man-Hours Saved
40 Ton Toggle Press	8.4 hrs.	3 hrs.	5.1 hrs.
72" Calender Machine	4.8 hrs.	3 hrs.	4.3 hrs.
Auto. Screw Machine	4.7 hrs.	3 hrs.	4.4 hrs.

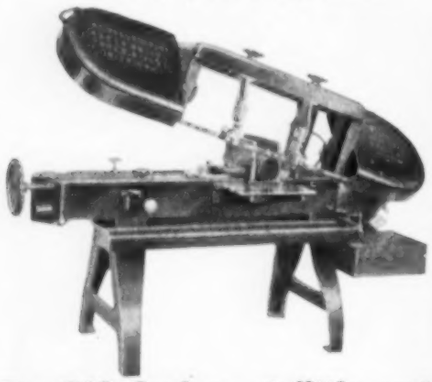
*Names on request.

And keep in mind that they represent economies in actual cleaning time only. Additional savings of up to 40% in repair costs, less "downtime" for production machinery, and fewer lost-time accidents, invariably result when machinery, tools, equipment and floors are kept clean and free of dangerous, speed-retarding dirt and grease.

Complete details are yours for the asking. Write today.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
P. O. BOX 55 CORAOPOLIS, PA.

If you write maker identify as IEN - 7402



For BIG Savings at little cost

. . . investigate this new Model H hinge-type saw, the economy model in W. F. Wells & Sons' line of metal cutting equipment. One-piece frame lowers hydraulically. Coolant system and other accessories available.

Send for literature today.

SPECIFICATIONS
Size 9" x 16"
Blade Size ¾" x .032 x 11 ft. 6"
Floor Space 20" x 66"
Blade Travel 60, 90, and 120 ft. per minute
Swivel Vise 45 degrees in either direction
Wt. Appr. 500 lbs.

W. F. WELLS & SONS
Three Rivers, Michigan

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 7403

CORROSION PROOFING . . Saran rubber applied as tank and pipe lining is described in booklet

Saran Lined Pipe Co.
2413-17 Burdette Ave., Ferndale 20, Mich.

Resistance of Saran rubber to chemicals and solvents at room temperature is given by a two-page table in new 8-page Booklet SR-3H. Physical properties are listed for the material in compounded and cured tank-lining form. Text and pictures describe use as lining, installation, typical applications.

If you write maker identify as IEN - 7404

CYLINDERS . . Schematic application diagrams form basis for data sheets on pneumatic cylinder uses

Westinghouse Air Brake Co.
1951 Herman St., Wilmerding, Pa.

"Datair Sheets" are issued at intervals by the company to bring you up to date on applications of its pneumatic power cylinders and operating valves. You may have seen some in recent issues of IEN. Each shows a schematic installation diagram along with a summary of the operation, equipment involved, reasons for its use, results. You can request addition of your name to the mailing list to receive a file of them.

If you write maker identify as IEN - 7405

EQUIPMENT . . Suggested maintenance procedures to keep electric power equipment in operating condition

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

"Preventive Maintenance" is title of new 28-page pocket booklet which the company will send on request to assist you in locating trouble before it starts in electric equipment. It describes what to check, when and how to look in motors, controls, generators, turbines.

If you write maker identify as IEN - 7406

FABRICATING . . Instructions on repair of aluminum alloy structures in new 220-page manual

Johnson Research Corp.
Hicksville-Massapequa Road, Bethpage, N. Y.

Company's experience in designing and stressing repairs for aircraft has been summarized in new "Design Manual for the Repair of Aluminum Alloy Structures." List price is $3.50. It covers general information on repair with a check list, materials and their processing, some 70 specific repair procedures on skin panels, extruded and rolled sections, castings and steel tubing. Data are given on standard fasteners.

If you write maker identify as IEN - 7407

FLOORS . . Recommended procedures on maintenance of floor surfaces from asphalt to wood

Multi-Clean Products Inc.
2281 Ford Parkway, St. Paul 1, Minn.

Seven types of floor surface are described as to properties, advantages, installation, maintenance, reconditioning along with general instructions on care in new 44-page "Floor Manual 1000." They include asphalt tile, concrete, terrazzo, rubber tile, wood, linoleum, carpets and rugs. Notes are given on available equipment and materials for the procedures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7408

BETTER POWER TRANSMISSION

Whenever you require a reduction in speed between any prime mover and a driven machine, there is a Foote Bros. drive exactly suited to your needs.

The Foote Bros. line includes horizontal and vertical drives in either helical gear or worm gear types. Also available are Foote Bros.-Louis Allis Gearmotors in single, double and triple reductions. Call your Foote Bros. representative or write for information.

SEND FOR BULLETINS
HGA Horizontal Worm Drives / Vertical Worm Drives / Hytop Worm Drives
LPB Line-O-Power Straight Line Drives
MPB Maxi-Power Helical Drives
GMA Foote Bros.-Louis Allis Gearmotors

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Boulevard
Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN - 7409

The Jacques Model 45 Slitter & Rewinder

For Low Cost Slitting & Rewinding
OF PAPER, PLASTICS, FABRICS, LAMINATIONS, ETC

Here's a machine designed for low cost slitting and rewinding of light materials up to 20/1000" thick. Handles widths up to 45" and parent rolls up to 40" diameter.

Because of its improved design, this Jacques slitter saves you money in initial cost, and in installation and operating expenses. Faster, easier production is made possible by new patented frictions. Available with rotary contact or razor-type cutters (or both) for your individual needs.

FREE FACTORY TEST RUN! Send your material and specifications to our plant for free test run at no obligation.

WRITE FOR DESCRIPTIVE FOLDER! *Get detailed information now!* For trouble-free performance through the years, specify only *genuine* Hobbs replacement parts.

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
EST. 1885
Producers of Modern Machinery for Modern Industry
Jacques Hand and Power Shears, Slitters and Rewinders, Hobbs Automatic and Tri-Power Die Presses, Paper Box Machinery and Touch-O-Matic Industrial Controls

If you write maker identify as IEN - 7410

NEW HYDRAULIC PUMP MOTOR features standardized system for DIRECT ENDBELL MOUNTING

This new Reuland Hydraulic Pump Motor is factory *adapted* to the direct, endbell mounting of *all makes* of hydraulic pumps.

AUTOMATIC PRECISION ALIGNMENT — All motors are supplied with factory machined endbell flanges, pre-engineered to fit the registers on the pump mounting flange.

LOWER INSTALLATION COSTS — (1) only one unit to mount. (2) No time wasted in adjusting to proper alignment. (3) Fabrication of pump mounting platform is eliminated.

LOWER OPERATING COSTS — Pump life is almost doubled when alignment is perfect.

VERSATILE COMBINATIONS — Supplied with pump flange mounts on one or both endbells.

Write for new Engineering Folder No. 1000-7
REULAND ELECTRIC COMPANY
Alhambra, California • Representatives in all principal cities

If you write maker identify as IEN - 7411

Grease Monkeys have retired
—since Transall took over

Pre-Lubricated
Belt Conveyor Idlers

No Lubrication Labor
No Lubrication Cost

TRANSALL INC.
Manufacturers of a complete line of Belt Conveyor Equipment
117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN-7412

men
machines
equipment

. . . In time of war
plan for PEACETIME
PRODUCTION

We are ready to discuss tooling for your post-war production. Write for our facilities list.

SEMCO
SERVICE MACHINE COMPANY
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN-7413

It counts your "UPS and DOWNS"

Added Evidence that
Everyone Can Count on
VEEDER-ROOT

Elevator Mileage Recorders give accurate figures on vertical miles . . . so that it can be plainly seen...*in advance*...when it's time to replace cables, overhaul cars, motors, and what have *you . . . including your life.*

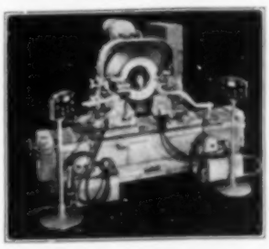
Yes, the V-R wheelmark monogram protects millions of people daily, from the depths of the sea to the stratosphere. Of course, not all V-R Products and services are available nowadays . . . but if your work counts importantly in defense, then you can count on Veeder-Root to help you, as soon as rush commitments permit.

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN.

If you write maker identify as IEN-7415

LATHE . . Tracer controlled for jet engine rings, discs, wheels

Source: MONARCH MACHINE TOOL CO.
613-17 N. Oak St., Sidney, Ohio



Complete specifications upon request

Models F and O are two new right-angle lathes with right and left-hand power angular slides and the company's Air Gage tracer control previously described IEN-2169-47.

Model F is a constant-surface-cutting-speed machine designed so the tool can operate on both sides of center to finish-face jet engine discs, wheels, and comparable parts. Model O is a similar machine with a 16-speed helical-geared headstock and two slides as shown in the illustration. One is for turning operations and the other is to bore. One of these slides can be tracer controlled, or both as shown. This model is particularly for finish turning and boring of jet engine rings, vanes, shrouds.

Both machines swing 60 in. in the gap and have maximum turning capacity at 48 inches. Faceplate diameter is 40 or 52 in. as specified. Maximum travel of the power angular slide is through 12 inches. Swivel is 90 deg. on both sides of center. Swivel of the tool slide is 180 deg. on both sides of center. Maximum travel for the tracer slide is 6⅝ inches. Model F takes a 15-hp. motor and Model O takes a 20-hp. motor. Assembly weight in both cases is about 25,000 pounds. Floor space is 127 by 115 inches and 130 by 129 inches.

Spindle speed control is timed with the tool slide which travels at right angles with the spindle. Speed variation, controlled by a template, is constant at 8 to 1. The speed-regulating action provides for uniform finish over the entire face of a work piece independent of diameter variation.

The tracer equipment is provided with its own power unit and pedestal-type control panel. The power unit is mounted on a track at the front of the machine bed. There is no limitation on the direction of tool approach to the work. The continuous single tool cut imparts a smooth stepless finish with inherent automatic sizing.

If you write maker identify as IEN-7416

VENTILATING . . Double fan assembly mounts in window or applies portably

Source: SCHWITZER-CUMMINS CO.
1123-27 Massachusetts Ave., Indianapolis 7, Ind.

Wire guard faces

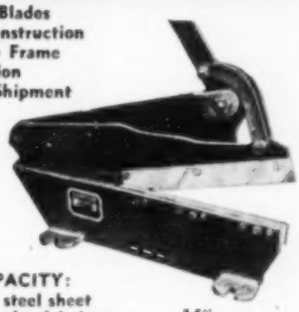
Two fans mounted on the shafts of ¼-hp. two-speed motors are assembled in the rectangular housing of this new Model C-25 Fresh-Air Maker. The housing measures 27 by 7½ by 14½ inches. Control centers at a 3-position switch. Rating is 1,000 cfm. at low speed, 2,560 cfm. at high speed. Operation is on a 110-volt 60-cycle ac. line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-7417

New SAMSON
SLITTING SHEAR

- Extra Long Blades
- All Steel Construction
- Unbreakable Frame
- Easy Operation
- Immediate Shipment



NEW
No. 40-S
$93.00
f.o.b. New York
(subject to change)

CAPACITY:
⅛" steel sheet
Length of knives..... 14"
Net weight .....140 lbs.

Can also be furnished with knives for corrugated steel sheets.

Catalogue of Metal Working Equipment furnished on request.

JULIUS BLUM & CO., Inc.
Established 1910
540A West 22nd St., New York 11 • WAtkins 9-7042

If you write maker identify as IEN-7418

MECHANICAL MUSCLES
WHICH ELIMINATE THE NEED FOR EXTRA HANDS — EXTRA TRIPS

PORTELVATOR©
HANDY HAMILTON
PORTABLE ELEVATING TABLE
LIFTS — LOWERS — LEVELS
TRANSPORTS

learn the penny-pinching particulars, write for this
FREE BULLETIN NO. P-505

The Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN-7419

KIPP Air Grinders

• FASTER SPEEDS
• BETTER RESULTS
• LOW PRICES

MODEL 2A
50,000 R.P.M.
Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42
IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN-7420

EAGLE
CONTROL
PANELS

Eagle Signal will assemble the right combination of Timers into a complete panel, ready to plug in and control your individual industrial process. Let Eagle help you plan a control panel large or small to produce higher quality, faster production with lower operating costs. Send your control problem to Eagle today.

EAGLE SIGNAL
Industrial Timers
EAGLE SIGNAL CORPORATION MOLINE, ILL.

If you write maker identify as IEN - 7421

GRIGOLEIT OFFERS Beauty and Economy IN MOLDED PLASTICS

For economy, service and sales appeal, now is the time to dress up your product with attractive new plastics by GRIGOLEIT. A complete line of stock handles, knobs, pendants and threaded specialties are available for your selection. Order now while we can still assure immediate delivery.

Whatever your problem might be, let GRIGOLEIT handle it!

THE GRIGOLEIT COMPANY
"Just Twenty years on Plastics"
732 E. NORTH ST. DECATUR, ILLINOIS

If you write maker identify as IEN - 7422

Generalift ★★★★★ PALLET BOXES

CUT MATERIALS HANDLING COSTS

REDUCE STORAGE COSTS

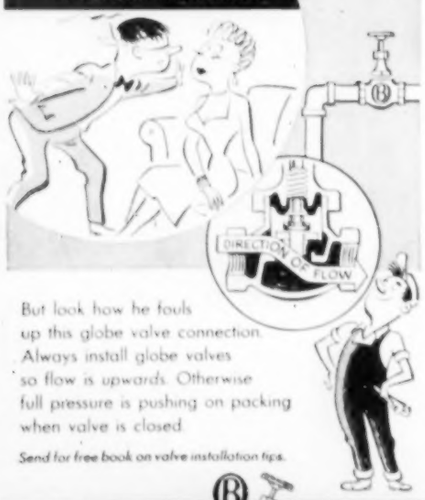
SEND FOR FREE BOOKLET TODAY

GENERAL BOX COMPANY..
★★★★★ engineered shipping containers

GENERAL OFFICES: 1815 Miner St., Des Plaines, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchenden.
Continental Box Company, Inc., Houston, Dallas.
General Box Company of Mississippi, Meridian, Miss.

If you write maker identify as IEN - 7423

SAM'S SENSE OF DIRECTION IS ALMOST PERFECTION



But look how he fouls up this globe valve connection. Always install globe valves so flow is upwards. Otherwise full pressure is pushing on packing when valve is closed.

Send for free book on valve installation tips.

Ohio Brass VALVES
MANSFIELD OHIO

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 7424

GAGES . . Advantages of optical projector in production gaging and inspection are stated in folder

Eastman Kodak Co.
341-45 State St., Rochester 4, N. Y.

"Optical Gaging" titles new 4-page folder intended to bring you up to date on recent developments in optical-projector parts measurement. It covers elements of an optical gage, charts, staging fixtures, the projector, advantages.

If you write maker identify as IEN - 7425

GAGES . . That sort automatically by size are described in booklet for a variety of precision work

Federal Products Corp.
1140 Eddy St., Providence 1, R. I.

Fragile sheets of mica to spark-plug bodies is an indication of the scope of work handled by automatic sorting gages shown in new 20-page booklet. Title is "High-Speed Automatic Gaging and Sorting." Basic elements are described for electro-mechanical or electronic gaging equipment. Assembly is shown with data on the work piece and production rate.

If you write maker identify as IEN - 7426

GEAR CUTTING . . How to sharpen hobs is described by text, tables and drawings in new booklet

Illinois Tool Works
2503 N. Keeler Ave., Chicago 39, Ill.

Instructions in new 12-page booklet are intended to assist you in keeping gear-tooth hobs in good operating condition. First is a table of sharpening tolerances. Next is presentation of possible error in flute spacing, rake, parallelism when sharpening. Then follows a description of correct procedure concluding with need for sharpening inspection. Title of the booklet is "The Right and Wrong of Modern Hob Sharpening."

If you write maker identify as IEN - 7427

HEATING . . Company publishes textbook on industrial fuel-burning problems and equipment

North American Mfg. Co.
4453-57 E. 71st St., Cleveland 5, Ohio

Basic reference on industrial heating is intended purpose of new "Combustion Handbook," a 350-page bound book available at its cost price of $2 plus postage. It describes the theory of combustion with gaseous and liquid fuels, outlines calculations for combustion, heat-transfer and fluid flow. It includes charts and data to assist in these calculations together with information on selection and operation.

If you write maker identify as IEN - 7428

INSPECTING . . Instructions on setting up a systematic inspection plan for parts in production

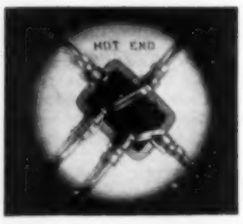
McGraw-Hill Book Co.
330 W. 42nd St., New York 36, N. Y.

Standard procedures for sampling plans are presented in new 228-page book, "Sampling Inspection by Variables," written by Bowker and Goode, list price $5. The book describes general principles of this method of sampling inspection, properties of plans given, installation and operation instructions, applications, mathematics involved, tables, charts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7429

SQUARE NICKEL ALLOY TUBING SOLVES TEMPER AND WEAR PROBLEM



WEAR RESISTANCE . . . the ability of small, square, water-cooled tubing to stand up to the abrasion of 25 pound hot-rolled steel slugs sliding over it for weeks on end was the need of one Superior customer. Attempts to solve the problem involved the use of various metals in many tempers . . . even included the use of hard, facing alloys and heat dissipating fins. When the answer was finally found—Superior had it. We now draw for this customer a nickel alloy tubing tough enough to do even this tough job without need for hard, facing alloys or other special handling.

IF YOU are using fine small tubing that doesn't quite perform up to requirements it will probably pay you well to check with Superior. We may be able to help from our production of tubing in all analyses from .010" to 5/8" O.D. and in certain analyses (.035" max. wall) up to 1 3/8" O.D. Outline your problem or application today in a letter to:

SUPERIOR TUBE COMPANY
2016 Germantown Avenue
Norristown, Pennsylvania

If you write maker identify as IEN - 7430

A DELUXE TOOL with enclosed ratchet — for safety

BEAVER NO. 3

THREADS PIPE 1/8 TO 1 INCH
THREADS BOLTS 1/4 TO 1 INCH

● A world-wide favorite for 40 years. Ratchet teeth fully enclosed—for safety. Openings between dies for easy oiling and chip clearance. Dies square in shape—no weak sections. Can be inverted for close threading. Made right or left-hand. Dies available for conduit and brass tubing. Die head carrier free. Metal case available, extra. Write for new catalog.

BEAVER PIPE TOOLS, INC.
262-300 DANA AVE. • WARREN, OHIO, U.S.A.

If you write maker identify as IEN - 7431

"KNOW HOW" IS IMPORTANT HERE!

In Universal's BIG LINE OF METAL HOSE Every type is ENGINEERED for SPECIFIC RESULTS

For example—

UMH Square-Locked Low Pressure Hose . . . engineered for efficiency in low pressure exhaust or intake installations.

UMH Interlocked High Pressure Hose . . . engineered for efficiency in conveying steam, water, tar, etc.

UMH Seamless Bronze Hose . . . engineered for efficiency in transmitting solvents, oil, refrigerants . . . under pressure, motion and vibration.

PLUS . . . many additional types of metal hose for every type of installation.

Send us an outline of your requirements for experienced engineered recommendations. Ask for Catalog U-101, too . . . today!

UNIVERSAL METAL HOSE CO.
2121 S. Kolmar Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 7433

If You Have A
FACTORY PROBLEM
In Production, Assembly, Packaging, Shipping

You Can Save Time and Money By Using

SEAMLESS
F.O.S.
INDUSTRIAL TAPE

CALL OR WIRE
collect for complete information, prices, catalogues, free samples. Tape to meet government specifications. Wire details collect for 24-hour reply.
"Originators of Pressure-Sensitive Industrial Tape"
75th Anniversary
WIRE INDUSTRIAL TAPE DIV. H
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

If you write maker identify as IEN - 7434

Do you have this valuable handbook?

it's full of useful data on springs

This revised edition of the "Accurate Handbook of Technical Data on Springs" offers 40 pages of clear, concise data on such subjects as design formulation, load deflection and the proper methods of specifying springs. Also presented are several helpful short cuts for making spring calculations. Engineers and designers will find the handbook invaluable. Write for your free copy today!

ACCURATE SPRING MFG. CO.
3807 W. Lake Street Chicago 24, Illinois

Accurate Springs

If you write maker identify as IEN - 7435

NO MORE CARBON SCRAPING

Nothing Decarbonizes and Cleans CARBURETORS, FUEL PUMPS, PARTS Like..

U.S. PAT. 2235843*
GUNK DUNK BENCH Carburetor and Parts Cleaning Kit. New 6½ gal. size deep "Vapor-caldron" design pail.

New—Improved—More Potent*
GUNK HYDRO-SEAL

*1. Faster . . . Terrific penetration . . . new improved odor.
2. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices and diesel nozzles . . . without etching.
3. Lasts more than one year . . . due to water blanket.
4. Works hot or cold . . . Rinses wet or dry.
5. Patented Double Barrel Performance Guaranteed.

A WORD OF CAUTION
If it doesn't bear the Genuine GUNK trademark, it may be a partly diluted imitation—and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

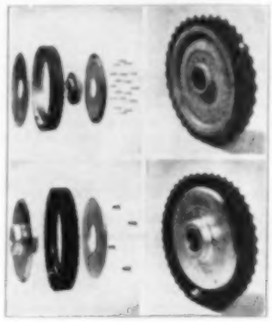
SOLD BY BETTER JOBBERS EVERYWHERE
Write for Name of Nearest Stocking Jobber
— Flatly Refuse Substitute Imitation —

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR
GURRAN CORP.

If you write maker identify as IEN - 7436

GRINDING . . Contact wheel supports abrasive belt on spiral teeth

Source: BEHR-MANNING CORP.
P. O. Box 808-A, Troy, N. Y.



14 and 16 in. diameters

Rubber-Rim designates new design of contact wheel for application with an abrasive belt in which a rubber-toothed rim is mounted on either steel or aluminum hub and flanges as shown in the two designs in the illustration. In one design the rim is assembled permanently on steel flanges employing rivets to hold the hub and flanges in place. In the other the rim is mounted on aluminum flanges that can be separated in the field after loosening four Allen set screws.

If you write maker identify as IEN - 7437

ADHESIVE . . Thermosetting resin bonds on contact, cures at room heat

Source: ARMSTRONG PRODUCTS CO.
P. O. Box 1-A, Dept 1-ES, Warsaw, Ind.

List price $1 for a test kit

Adhesive A-6 is a new thermosetting material consisting of a viscous paste and a liquid curing agent. The two are kept separate until just prior to use. Then they are mixed to start the curing action. This is completed in 1 to 36 hr. of depending on the temperature. Bonded work however can be assembled immediately after application. The new adhesive is suited for metals normally hard to bond such as aluminum. It is suited also for use on wood, plastics, glass. Packaging is in pints, quarts, gallons and 5-gal. pails.

If you write maker identify as IEN - 7438

VISE . . Detachable jaw faces made of bronze, aluminum, plain, faced

Source: MAROTH ENGINEERING
552 Grumman Hill Road, Wilton, Conn.

Bronze 5 inch $5

Cataloged sizes range from 2 to 5½ in. in ¼-in. steps between the end flanges of this new soft detachable jaw face. One flange is threaded and carries a set screw to tighten on a vise or to permit quick removal. Additional sizes range upward to 8 in. for specification above the 5½-in. dimension. Soft facings include fiber, lead, babbit. The units are supplied in sets with an Allen wrench and two set screws.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7439

A PAID NEWS ADVERTISEMENT BY BOSTITCH

ASSEMBLING—Wire stitcher fastens metal parts up to 10 times faster

Bostitch Metal Stitchers are reported to provide the fastest known method of fastening aluminum, copper and cold-rolled steel sheet forms to each other and to rubber, plastics, fabrics.

These powerful machines manufacture their own staples out of heavy steel wire and drive them as fast as 205 stitches a minute. Because of this power and speed, many users report 50% to 90% savings in assembly time as compared with cementing, spot-welding, riveting, bolting.

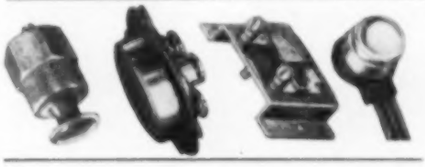
Other advantages of fastening metal parts with Bostitch metal stitchers are that they provide a self-inspecting method and require less skill on the operator's part for high-speed production.

Bulletin 273 shows how and where Bostitch Metal Stitchers save time, labor, and money.

BOSTITCH
464 Mechanic Street, Westerly, Rhode Island

If you write maker identify as IEN - 7440

FOR TANKS OR UNIT HEATERS
KLIXON
Thermo Snap
CONTROLS
Provide Accurate Temperature Control



Klixon Thermo-Snap Temperature Controls, specially designed for built-in application, give you accurate control usually at a lower cost than expensive general purpose controls.

Klixon Thermo-Snap Controls are used in military and civilian products in such applications as electric heaters, gas heaters, oil heaters for fan switches and high limit shut-offs . . . in tank, aircraft, truck and bus heaters for fan and limit switches, fuel delay switches, ignition controls . . . in dairy water heaters, soldering guns, melting pots, ironing machines, flat irons for temperature control . . . in radio equipment for tube and rectifier cooling control.

Klixon Thermo-Snap Controls are available in many types and ratings including hermetically sealed units.

Over 50 million Klixon Disc-Type Thermostats in all types of products are giving accurate performance.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
207 FOREST ST., ATTLEBORO, MASS.
KLIXON

If you write maker identify as IEN - 7441

THE MOST SANITARY WASH FIXTURES

One Bradley sprayhead replaces four faucets.

Hands Touch ONLY CLEAN RUNNING WATER

NO FAUCETS
Write for Bulletin K-711

For extra sanitation Bradley DUO Washfountains incorporate foot-control to guard against contagious washbowl contacts. Self flushing bowl eliminates dirty water collections.

Each Bradley DUO serves two people simultaneously, cuts plumbing costs, and reduces water consumption. BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan Street, Milwaukee 1, Wisconsin.

BRADLEY Duo washfountains
Distributed through Plumbing Wholesalers

If you write maker identify as IEN - 7442

LIGHTWEIGHT
VERSATILE
POWERFUL...

Hein-Werner
Hydraulic Jacks
meet industrial needs

Turn hard jobs into easy ones. The 8-ton capacity Hein-Werner Hydraulic Jack (illustrated) provides 16,000 lbs. of hydraulic pressure for pushing, pulling, bending or straightening operations. This jack is easy to handle for it weighs but 27 lbs., and operates in any position from vertical to horizontal.

The complete line includes models of 3, 5, 8, 12, 20, 30, 50, and 100-tons capacity. See your industrial supply distributor or write us for details.

Hein-Werner Hydraulic Jacks
HEIN-WERNER CORPORATION
WAUKESHA • WIS.

If you write maker identify as IEN - 7443

If you write maker identify as IEN - 7444

Continuously self-cleaning
ELLIOTT
Type K
WATER
STRAINER

When relatively large quantities of foreign matter and debris are to be removed from water, let an Elliott Type K strainer take over. This improved strainer actually cleans itself continuously by back-flushing each straining unit successively. No lost time, since operation is completely automatic. Slow moving rotor holds power costs down, even for the largest size units.

Sizes 4" to 36". Working Pressure — 125 lb. gage. Send for the complete story. Write for the Type K Self-Cleaning Water Strainer Bulletin.

A 2-2

ELLIOTT Company
Accessories Dept. JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 7445

Saves you more time than any other tool in your kit

A Journeyman's tool, built to stand up under constant, on-the-job Contractor or Industrial use.

Built-in Blower—Anti-friction replaceable bearings—No starting hole needed—Blades to cut all materials—Fits any heavy duty ¼" or ⅜" drill.

Super Saws and Blades are listed on Federal Supply Schedules, Class 40 Material.

Write for Bulletin H-7 and prices

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 7446

LIGHTING . . Handbook on industrial lighting describes principles, equipment, indoor and outdoor use

Holophane Co.
342 Madison Ave., Rm. 719, New York 17, N. Y.

"Lighting for Industry" is new 96-page handbook of information on industrial lighting principles and practice written by the company's engineering department. First of three sections covers calculations, depreciation in service, lamps, glare, economics. Second section describes indoor lighting. Last section covers outdoor uses from fence lighting to cranes.

If you write maker identify as IEN - 7447

LUBRICATING . . Application instructions on wax lubricant materials for metal working operations

S. C. Johnson & Son Inc.
1523-27 Howe St., Racine, Wis.

Basic properties of high temperature tolerance, pressure capacity and polarity are described for the company's wax materials in new 20-page booklet, "Facts about Johnson's Wax Lubricants for Metal Working." Specific application instructions then are given on five of these materials.

If you write maker identify as IEN - 7448

MANAGEMENT . . Planning company structure is described in new book that reports current practice

American Management Association
330 W. 42nd St., New York 36, N. Y.

Two major subjects are treated in new 230-page book, "Planning and Developing the Company Organization Structure," list price $4.50. The first concerns the dynamics of organization with such problems as delegating responsibilities, reducing the executive's burden, delegation of decision-making. The second deals with mechanics of organization, assigning the job, putting the organization plan into effect.

If you write maker identify as IEN - 7449

MANAGEMENT . . When to replace equipment the subject of a speech now published in booklet form

Machinery & Allied Products Institute
1234-38 20th St., N. W., Washington 6, D. C.

Geoffrey G. Beard, Executive Vice-President of United Engineering and Foundry Company, made a speech recently on the subject, "Economics and Problems of Machinery Replacement." It is available on request as a 20-page booklet. Topics include technological stagnation, the nature of replacement, replacement policy, analyses, depreciation.

If you write maker identify as IEN - 7450

MANAGEMENT . . Book on industrial publicity describes its value to a company and how to go about it

Putman Publishing Co.
111 E. Delaware Place, Chicago 11, Ill.

George Black, Manager of Public Relations Division of the Cooper Alloy Foundry Company, is author of new 136-page book, "Planned Industrial Publicity." List price is $2.95. The book describes types of industrial publicity, methods of preparation and distribution, how to plan a long-range program, how industrial publicity benefits a company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7451

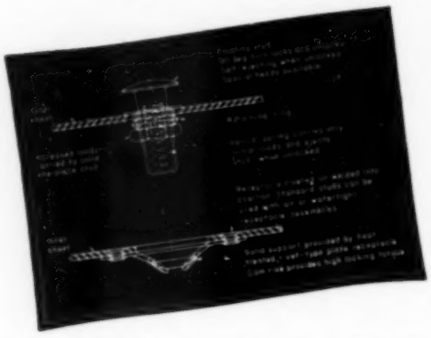
A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 217

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emporium, Pa.
Sales Offices: Times Bldg., Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

If you write maker identify as IEN - 7452



HOW QUICK-LOCK CUTS FASTENING COSTS

QUICK-LOCK speeds up the mounting and demounting of detachable panels, works equally well on curved or straight sheets. It is adaptable to many different fastening applications in the aircraft, automotive, railroad, electrical and appliance fields. Write for literature and samples today.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, New York

Simmons
QUICK-LOCK
SPRING-LOCK
ROTO-LOCK
LINK-LOCK

FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

If you write maker identify as IEN - 7453

Really Free Turning
BALL BEARING
SWIVEL FITTINGS

RAMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES
FITTINGS AND PRESSURES TO 15,000 P.S.I.
AND TEMPERATURES TO 750° F.

Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U.S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with Teflon ideal for corrosive surfaces. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at left, threaded, flanged or weld ends.

RAMSCO
RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

If you write maker identify as IEN - 7454

What are YOU paying for
COLD PUNCHED NUTS

Quantity buyers of quality nuts are finding Jacobson an unbeatable source. Sold in bulk only, they offer every advantage of price, delivery and variety in steel and brass (Plated or Unplated).

• Conduit Locknuts (U. L. Approved) • Machine Screw Nuts (Square or Hexagon) • Electrical Fixture Nuts • Specials (Made to Rigid Specifications).

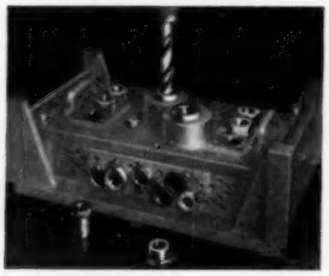
Once you, too, have tried Jacobson, you will understand the incredible progress made by this firm via recommendations only. Write today. We'll answer your inquiries fully.

JACOBSON MFG. CO., INC.
Kenilworth 5, N. J. • UNionville 2-0200

If you write maker identify as IEN - 7455

EX-CELL-O BUSHINGS

On the Job!



Shown above is a jig illustrating the use of Ex-Cell-O Drill Jig Bushings. Note the various types—headless press fit, head type press fit, and slip renewable bushings—three of the many types carried in stock and described and pictured in Ex-Cell-O's bushing catalog—yours for the asking—Bulletin 35371.

XLO

51-29

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

If you write maker identify as IEN - 7456

Simplicity is the keynote!

NEW simplified Recording Potentiometer by WESTON

This new high-speed Recording Potentiometer by WESTON sets a new pattern for sound, simplified design . . . for simplicity and economy of maintenance . . . and for sustained high accuracy and sensitivity. Here are a few of its many outstanding features:

Chart Installation is simpler . . . with new accessibility, and no loose parts to handle, chart can be installed in half the usual time.

Chart Speed Changes are simpler . . . exclusive multi-speed chart drive permits instant selection of five different speeds with ordinary screwdriver. Speeds doubled or quadrupled by two simple gear changes.

Changing Ranges is simpler . . . you just insert correct range standard and tighten with screwdriver. Reference junction compensation changed in like manner. *No soldered connections used.* Universal slide wire needs no changing.

Pen and Carriage are simpler . . . pen quickly, easily filled without removal, or taking instrument out of service. Pen won't clog, never pumps or syphons-off, needs no priming after initial starting.

All Maintenance is simpler . . . plug-in type amplifier, for example, removed in a jiffy. Liberal use of oil-less bearings reduces lubrication problems. No on-the-job soldering required.

Write for descriptive booklet.
WESTON Electrical Instrument Corporation
617 Frelinghuysen Ave., Newark 5, N. J.

246

WESTON Instruments

If you write maker identify as IEN - 7458

PROTECTING . . Fabric glove is reinforced with plastic dots

Source: RIEGEL TEXTILE CO.
P. O. Box 170-A, Grand Central Sta., N. Y. 17, N. Y.

$3.15 per doz., 24 doz. lots

The company forecasts savings of about 40 per cent to industrial users, in work glove costs, by change over from plain fabric gloves to the new plastic dot design shown in the illustration. Tests indicate that the new dot fabric outlasts 10-oz. canton flannel fabric by something over 2 to 1. The dots materially improve wearing quality without affecting weight, flexibility or comfort.

If you write maker identify as IEN - 7459

PLASTIC . . Fiberglas reinforced sheet designed for product manufacture

Source: DYNAKON CORP.
5507-11 Hough Ave., Cleveland 3, Ohio

Technical data upon request

The company announces increase in the thickness range of its Fiberglas-plastic sheet, Grade A3A, previously described IEN-44-52. The material is now available in fractional steps from 1/16 to 1/4 in. in thickness as compared to the previous 1/2 in. maximum. Sheet sizes measure 18 by 28 in. as before. Special thicknesses, to 2 1/2 in., can be specified.

Tensile strength is 11,000 lb. per sq. in. with compressive strength at 14,300 pounds. Dielectric strength is 325 volts per mil. Moisture absorption is 0.39 per cent. The material is resistant to attack by mild alkalis and most acids. It is suited for service in temperature below 300 deg. F.

If you write maker identify as IEN - 7460

TIMING . . Stop watch is non-magnetic, has 30 min. register

Source: CLEBAR WATCH AGENCY
521 Fifth Ave., 18th Floor, New York 17, N. Y.

Model 652, shown in the illustration, is a new 7-jewel stop watch with non-magnetic movement, 0.2-sec. graduations and a 30-min. register. Model 601 is a similar new unit with a decimal dial and with minutes divided into hundredths. Both meet the requirements of the National Bureau of Standards. Interval start and stop is by means of a slide on the side of the case. Resetting to zero is at the stem where the watch also is wound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 7461

WATSON-STILLMAN

HYDRAULIC POWER TOOLS FOR INDUSTRY

HYDRAULIC JACKS

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

WIRE ROPE SHEARS

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

PORTABLE PIPE BENDERS

Bends standard, extra heavy and double extra heavy steel pipe from 3/8 in. to 2 in., as well as standard weight pipe up to 3 in. dia. Also solid mild steel bars up to 2 in. dia.

HAND PUMPS

Single and double plunger types, with reservoirs of different capacities for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

9-46-10

Send for your copy of Bulletin A-5 . . . It's Free.

DISTRIBUTOR PRODUCTS DIVISION
WATSON-STILLMAN
ROSELLE, NEW JERSEY

If you write maker identify as IEN - 7462

SOUTH BEND 13" LATHE for Accurate, Low-Cost Machining

South Bend 13" Lathes are popular wherever there are a variety of precision parts to be machined. These quality-built lathes are fast and simple to operate. Set-ups and job change-overs are quickly and easily made. Maximum production at highest accuracy and lowest cost will reduce expenses in your shop. Write for complete information on South Bend Precision Lathes, Drill Presses, Shapers and other machine tools.

SOUTH BEND LATHE
South Bend 22, Indiana
Building Better Tools Since 1906

If you write maker identify as IEN - 7463

Speeds sanding of metal surfaces preparatory to priming and final finish

Speed the removal of burrs, grinder marks, and other defects in metal surfaces before priming . . . then sand primer coat to a smooth, level surface before final finish. Sundstrand Air Sanders with *Straight-Line Action* are available in single or double pad models, for wet or dry sanding on flat or curved surfaces, to handle almost any sanding operation on wood, metal, or plastics. See your local distributor or write us today for Bulletin IE-7.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 7464

SAFER HANDLING

OF PETROLEUM AND SCORES OF OTHER LIQUIDS!

For safer handling of liquids in plant or field, look to TOKHEIM PUMPS. This new double-action hand pump stops dangerous dripping and slippery floors. Reduces fire hazard and accidents common to other methods of transfer. Saves on drum storage space. Speeds production, reduces costs. Handles scores of liquids efficiently (see list below). Choice of hose and spout models—for drums, skid tanks and underground installations.

Write for literature

TOKHEIM DOUBLE-ACTION HAND PUMPS

UL

DO YOU NEED A PUMP FOR THESE LIQUIDS?

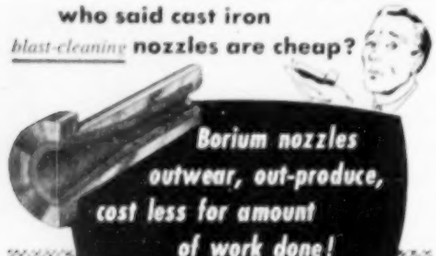
A Tokheim Will Handle Them All and Others. Tell Us Your Problem!

Petroleum Products • Acetates • Alcohols • Aromatic Solvents • Chlorinated Solvents • Glycols • Ketones, Ethers • Petroleum Solvents • Plasticizers

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1656 Wabash Avenue, Fort Wayne 1, Indiana
Factory Branch: 1309 Howard Street, San Francisco 3, California

If you write maker identify as IEN-7465

who said cast iron *blast-cleaning* nozzles are cheap?



Borium nozzles outwear, out-produce, cost less for amount of work done!

Ever figure what cast iron blast nozzles *really* cost? . . . in downtime for changes, poor production, slower cleaning; in spatter loss and *extra* air consumption?

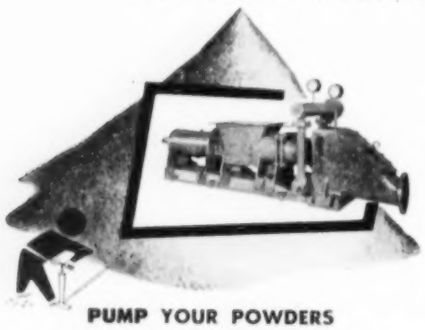
Here's the answer to vastly improved results: BORIUM NOZZLES stay on the job 300 times longer than cast iron—usually more. Their pure tungsten carbide (BORIUM) liners fight wear, hold orifice dimensions, overcome cut-outs. Result: Air is conserved, compressors work less, velocity stays up. Harder hitting particles clean faster, stay on the target, do *MORE* work in less time!

GET THE FACTS . . . Ask for BORIUM NOZZLE folder showing standard screw and flange types. Special BORIUM nozzles and liners built to your specs.

STOODY COMPANY

11930 East Slauson Avenue, Whittier, California

If you write maker identify as IEN-7466



PUMP YOUR POWDERS with a FULLER-KINYON SYSTEM!

Powders that can be aerated flow like water—anywhere in a plant—when they're pumped by Fuller-Kinyon. Such dry, pulverized materials can be automatically distributed to any desired number of bins in sequence. No dust nuisance . . . no waste . . . safe . . . sanitary . . . low power . . . low maintenance. If you have a bulk dry material handling operation, it will pay you to ask Fuller about it. Write for further information.

F-122

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg.

fuller DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

If you write maker identify as IEN-7467

INCREASES TAP LIFE

by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output . . . practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine tool gray. Write for circular.

$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2734 E. MICHIGAN AVE.
KALAMAZOO, MICH.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN-7468

MOTORS . . Collection of 101 user reports on "Life-Line" electric motors are grouped by industry

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Bulletin B-4769-A is new 36-page compilation of 101 case histories on the company's "Life-Line" motors with sealed ball bearings. These are grouped by chemical service, textile applications, petroleum, lumber, metalworking, machine tools, paper, food, mining, fans, pumps, air conditioning.

If you write maker identify as IEN-7469

POLISHING . . Booklet uses cartoon figure to describe reasons for using coated abrasive belts

Behr-Manning Corp.
P. O. Box 808-A, Dept. F. P. No. 1, Troy, N. Y.

"Polisher Pete" is the name of a cartoon character in the company's new 28-page booklet on its coated abrasive belts. He has trouble with polishing metal parts, tries coated abrasive belts, learns about their possibilities. The story ends happily. **Ask for "How Polisher Pete Put Economy in Polishing"** when you write.

If you write maker identify as IEN-7470

PROCESSING . . How textile dyeing takes place is described in technical bulletin which reports research

Calco Chemical Div. American Cyanamid Co.
Industrial Blvd., Bound Brook, N. J.

New method is described in 24-page Technical Bulletin 825 for observing appearance and behavior of textile fibers and the dye bath during a continuous dyeing operation. It is based on a special microscope assembled in the company's laboratory. Description of the equipment and the method is illustrated by photomicrographs, some in color, showing how dyeing takes place in textile fibers.

If you write maker identify as IEN-7471

STEELS . . Corrosion resistance data on austenitic chromium-nickel stainless steels in booklet

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Test results are summarized in 32-page booklet, "Corrosion Resisting Properties of the Austenitic Chromium-Nickel Stainless Steels." The booklet, copyright 1949, has been issued in a new printing. It describes factors affecting corrosion, suggestions on equipment design, corrosion in a range of media.

If you write maker identify as IEN-7472

TESTING . . Use of the electron microscope is shown for industrial product research and control

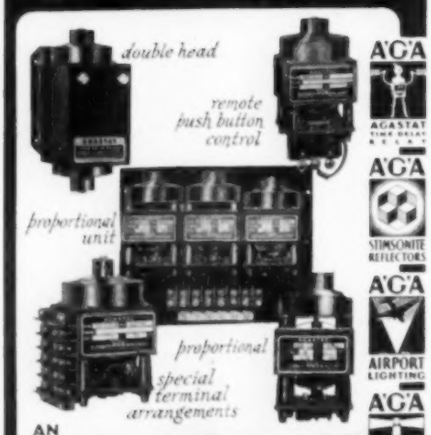
Radio Corp. of America
1941 Front & Cooper Sts., Camden 2, N. J.

Nine specific examples are shown in new 24-page Booklet 2R-8195 on industrial uses of the company's electron microscope. They range from investigating the action of colloidal silica to make floor wax non-slip to checking the particle size of synthetic latex for a desired application. You may be interested to see the magnifications to 25,000 times.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7473

special-type...



A'G'A AGASTAT TIME DELAY RELAY
A'G'A STIPSONITE REFLECTORS
A'G'A AIRPORT LIGHTING
A'G'A MARINE LIGHTING EQUIPMENT

AN **AGASTAT** TIME DELAY RELAY for every requirement

A'G'A DIVISION OF ELASTIC STOP NUT CORPORATION OF AMERICA
1027 NEWARK AVE., ELIZABETH 3 NEW JERSEY

If you write maker identify as IEN-7474

LAUGHLIN SAFETY HOOKS...

Drop forged steel hook with pressed steel or cast bronze latch, stainless steel spring and rivet attached to hub of hook forging.

Fifteen sizes for safe working loads from 1200 to 30,000 lbs. Available in eye, shank or swivel patterns.

BEST POSSIBLE PROTECTION FOR EVERY LOAD

Latch locks the load, leaves 80% of regular throat opening.

Safety Hooks are **one item** in Laughlin's line of **1500** types and sizes of wire rope and chain fittings — both standard and exclusive. For complete information, send for free catalog No. 150.

THE THOMAS LAUGHLIN CO. 71 FORE ST., PORTLAND, ME.

LAUGHLIN
THE MOST COMPLETE LINE OF WIRE ROPE AND CHAIN FITTINGS

If you write maker identify as IEN-7475

"HOLD EVERYTHING"
with this strong, open-side, all-purpose handy vise.

Takes work from 3 sides
Range from 2⅜" to 8⅝"
Positive non-slip grip

Ideal for valves, manifold fittings and all other hard-to-hold items.

● Heavy, one-piece malleable cast-iron body is virtually indestructible. Takes work from 3 sides. Four easily replaceable dies in lower jaw provide positive grip to hold work safely in balanced non-slipping position. Easily installed non-scarring soft jaws also available. Vise screw made of toughest steel has coarse Acme thread for rapid adjustment. Counterbalanced handle, mounted at efficient arm height, can be quickly extended for extra leverage. Wide range replaces three ordinary vises. Far safer and faster than chain tongs. For folder and prices address . . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX, LOS ANGELES 54, CALIFORNIA

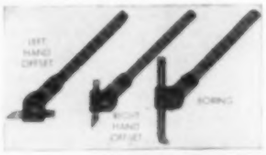
If you write maker identify as IEN-7476

WALTON-AMERICAN Tool Holders

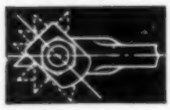
Hold with a perfect grip, tool bits, or boring bars in all sizes from ⅛" to 7/16", square or round. Besides gripping the tool securely top and bottom, it is held so that no lateral motion is possible.

VERSATILE MULTI-POSITION

The Walton-Americans are adjustable to bit size, and to any cutting position. All changes may be made at the machine without additional heads or set screws.



One Walton-American can be used in straight and right or left hand offset positions, or any other position around an entire circle (see illustration). Economy is doubly assured for very short bits may be used, and jaws will not break high speed steel or Stellite bits.



OTHER WALTON PRODUCTS—The well known *Walton Tap Extractor* for removing broken taps; and *Reps Pipe and Stud Extractor* for removing broken pipes, studs and screws (a product of Walton's affiliate, Reps Tool Company, Inc.).

Send for complete catalog No. 15 of all Walton Tools.

THE WALTON COMPANY
HARTFORD 10, CONNECTICUT

If you write maker identify as IEN-7477

"M-B" Model S-VT 18,000 RPM "SPEE-DEE" Pneumatic POLISHER

A development filling a distinct need. Produces remarkable results on real production work when abrasive rolls and pencils, also bands, etc., are used. Flexible air-control lever for starting and stopping. Husky, light weight, 14 oz. Power to spare. Special grease-sealed bearings. Will handle many applications, also with "High-Speed" Rotary Files.

ALSO "M-B" PNEUMATIC GRINDERS — AUTOMATIC AIR LINE FILTERS, REGULATORS AND LUBRICATORS

"Remember, Built-In Quality Remains Long After First-Cost Disappears"

Write for Literature

M-B PRODUCTS
46 Victor Ave.
DETROIT 3, MICHIGAN

If you write maker identify as IEN-7478

open-end ratchet wrench

TAC

invented, perfected and produced solely by TAC

Volume-manufactured in two styles—the socket type and the Crowfoot type, TAC Open End Ratchet Wrenches are scoring phenomenal time and labor savings throughout all Industry.

It is a matter of record that heretofore no tool was made that could *—in a limit of 7° ratcheting arc*—successfully tighten or back off nuts or fittings on tubing or other standing center assemblies. The speed with which TAC can complete difficult wrenching jobs, in anybody's hands, is amazing.

Our plants are currently producing at capacity for all the Armed Forces and for Defense industries.

For Phenomenal Speed in These Wrenching Jobs

ELECTRICAL CONDUIT
HYDRAULIC LINES
LUBRICATION LINES
ENGINE FUEL LINES
PNEUMATIC LINES
REFRIGERATION
AIRCRAFT
RAILROAD EQUIPMENT
RIGGING EQUIPMENT
REFINERY EQUIPMENT
CHEMICAL LINES
AUTOMOTIVE EQUIPMENT
WATER AND GAS LINES
... AND DOZENS OF OTHERS

© 1952—TAC

TAC
TUBING APPLIANCE COMPANY
10321 ANZA AVENUE
Los Angeles, California

If you write maker identify as IEN-7480

DRYING . . Silica-gel equipment removes excess moisture from a room

Source: DRYOMATIC CORP.
810-14 N. Fairfax St., Alexandria, Va.

Automatic action

The company announces a new design of its silica-gel dehumidifying equipment, previously described IEN-0678-48. New Model 25CT now includes separate dry-air exhaust and reactivation air-intake vents as well as delayed-action control to assure that the desiccant is completely dehydrated and cooled before operation switches back to drying.

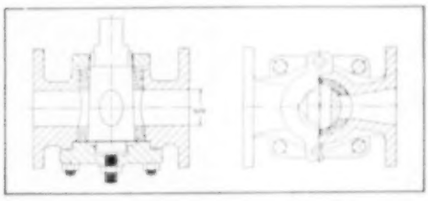
The motor-driven blower in the 14 by 21-in. housing draws in air at 32 cfm. from a room. It passes it through a dust filter and then down through a bed of silica gel, or activated alumina, to the 2½-in. dry-air outlet where it returns to the room. The silica gel removes the moisture until it reaches a point approaching saturation. Then the dry-air valve closes, the moisture outlet valve opens, an electric heating element is started under the silica gel to drive out the accumulated moisture and let it move through the 1½-in. moisture outlet. When activation has been completed the machine resets itself following the time-delay interval for normal operation.

Capacity is for an area to 10,000 cu. ft. in which the unit will provide humidity control as low as 15 per cent in an operating range between minus 40 and plus 100 deg. F. Operation is on 110-volt 60-cycle single-phase ac.

If you write maker identify as IEN-7481

VALVE . . Tapered plug design, Teflon lined, for corrosive fluids

Source: DURIRON CO.
448-52 N. Findlay St., Dayton 1, Ohio



No packing, no lubrication, no sticking

Self-lubricating, chemically inert Teflon plastic forms a liner surrounding the plug in the company's Type-F Durco plug valve. It also is employed as a diaphragm between the plug and the bottom adjusting plunger. The valve assembly is now available in sizes from ¼ to 2 in., the 1½ and 2 in. sizes having been added recently. Standard construction calls for a Durimet-20 plug and body for the corrosion-resistant duty. Other alloys can be specified.

The Teflon liner is produced in a molding operation, by Kurz-Kasch, Inc., consisting of pressing preforms, sintering at 700 deg. F. and coining. The finished part is accurate to size and ready for assembly in the valve body.

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-7482

NEW PLANT MAKING AGRICULTURAL AMMONIA USES FRICK REFRIGERATION

The Mississippi Chemical Corp. at Yazoo City uses three Frick compressors to hold 2,000 tons of liquid ammonia in the spherical tanks (at upper right) by reducing the pressure and temperature.

This eight-million-dollar plant, built by 10,000 stock-holding farmers, produces both liquid ammonia and solid ammonium nitrate for use as fertilizer.

Three Frick Compressors in Service at the Mississippi Chemical Corp.

Installation by Munford Engineering Co., Frick Distributors at Jackson.

For that all-important cooling job of YOURS, get in touch with

FRICK & CO.

If you write maker identify as IEN-7483

FOR YOUR TOUGHEST JOBS NEW OTC

30 TON POWER-TWIN *Hydraulic Puller*

BIG BROTHER TO THE FAMOUS 17½ TON POWER-TWIN

Dynamite . . . the tough 30 ton OTC Power-Twin Hydraulic Puller . . . saves hours and dollars on every overhaul job. Light . . . compact . . . safe remote control. Gives 30 tons of power with only 100 pounds of pump pressure. Complete Hydraulic Puller sets for both 30 ton and 17½ ton Power-Twin.

WORKS WONDERS

Power-Twin pulls or installs bearings, gears, pinions, shafts, studs, wheels, pulleys . . . also performs as a heavy jack, straightener or compressor.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
271 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN-7484

SO SIMPLE...

KESTER FLUX-CORE SOLDER

So Simple . . . to end your soldering troubles with Kester's flux control (different core sizes) plus the wide selection of Flux-Core Solders in many wire sizes ranging from .009" to ¼-inch.

Kester also provides Field Engineering Service.

Free Technical Manual. Send for your copy of "SOLDER and Soldering Technique" today.

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, New Jersey • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN-7485

For VOLTAGE CONTROL of Small Alternating-Current Machines

ALLIS-CHALMERS Generator Voltage Regulators control voltage by automatically changing resistance in the exciter shunt field circuit. Only a small rocking movement of the contact sector over the curved commutator is required to cover the entire regulating range. Response is fast and accurate . . . sliding friction eliminated and wear minimized.

The V-00 regulator is used on ac generators with direct-connected exciters to 157 kva at 3600 rpm. Type 221 is used on ac machines with direct-connected exciters to 438 kva at 3600 rpm. These regulators can be modified for temperature compensation, shock mounting, or other special requirements.

Ask your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B6143A. A-3621

Rocking Contact is an Allis-Chalmers trademark.

ALLIS-CHALMERS

If you write maker identify as IEN - 7486

SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 · INDIANA

If you write maker identify as IEN - 7487

ARE YOUR PLANT AND FACILITIES BURIED?

Model 218

Plants and machinery buried in dirt and debris won't meet our country's increasing production demands. Keep your plant clean at all times.
Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 7488

WHICH OF 1001 USES FOR THIS METAL HOSE IS YOURS?

Are you overlooking an opportunity to improve the performance, life, or salability of your equipment with metal hose?

Yours may be one of the hundreds of undiscovered uses for metal hose—especially for flexible, pressure-tight TITEFLEX® Metal Hose.

The special construction of Titeflex, and the variety of alloys, sizes, and fitted lengths enable you to combat severe temperature, pressure, and corrosion conditions where a flexible connection is necessary.

For maximum results, ask us for design suggestions and help in hose selection.

Titeflex Let Our Family of Products Help Yours

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Please send me information about Titeflex Metal Hose and its applications.

NAME
TITLE
COMPANY
ADDRESS
CITY ZONE STATE

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 7489

VENTILATING . . Design of exhaust hoods is treated at length in new 148-page textbook

Industrial Press
148 Lafayette St., New York 13, N. Y.

Second and enlarged edition is announced for the textbook, "Exhaust Hoods," by J. M. Dallis Valle. The book starts with four chapters on fundamental theory, then follows with five chapters on actual hood design for dust, mist, fumes, vapor, gases. Other chapters cover woodworking machinery, calculations, construction. List price is $3.50.

If you write maker identify as IEN - 7490

VENTILATING . . Useful technical data in catalog on ventilating and air conditioning units

Westinghouse Electric Corp.
202 Readville St., Boston 36, Mass.

Three sections comprise new 60-page Sturtevant Catalog 600. First after a two-page quick-finder application index is a section on equipment covering fans, blowers, unit heaters, cooling coils, air conditioners and electronic air cleaners. Next is a section on their application to heating and ventilation, industrial process work, air conditioning. Last is a 16-page section of technical data such as sizes of exhaust hood connections, steam tables, psychrometric chart.

If you write maker identify as IEN - 7491

WELDING . . Preheating for welding described as to reasons and methods by technical reprint

Tempil Corp.
11 W. 25th St., 5th Flr., New York 11, N. Y.

Why preheat before welding is answered in detail by a 12-page reprint of an article from the technical literature. It is written by Arthur B. Tesmen, company's metallurgical engineer, and will be sent upon letterhead request. It gives five reasons for preheating, includes a table of preheat temperatures for metals and alloys, shows methods.

If you write maker identify as IEN - 7492

WOOD TREATING . . Questions and answers on pentachlorophenol and its use as a wood preservative

Monsanto Chemical Co.
1702 S. Second St., St. Louis 4, Mo.

"What Is Penta?" is first of 51 questions answered by new 40-page "Your Answer Book on Penta Wood Preservation." The questions are those asked most often of the company concerning its pentachlorophenol material. They include methods of application, quantity required, standard and special uses.

If you write maker identify as IEN - 7493

ZINC . . Spinning and drawing of sheet zinc into products is described in new folders

American Zinc Institute
60 E. 42nd St., Rm. 1561, New York 17, N. Y.

Two new pocket folders are offered by the Institute to acquaint you with the possibilities of zinc as a material for making metal parts. One tells how to spin zinc, shows a typical tool arrangement and a number of spun parts. The other describes drawing of zinc, notes self-annealing properties of the metal, shows a variety of drawn zinc parts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7494

CAN WE SERVE YOU

We make PRECISION PAPER PRODUCTS at a saving to Industry

TUBE SHAPES

- LENGTHS
- DIAMETERS
- WALL THICKNESSES
- FINISHES

SONOCO PRODUCTS COMPANY
HARTSVILLE S. C. HYSTIC, CONN.

If you write maker identify as IEN - 7495

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.

Interchangeable Pistons

Integral Release Valve

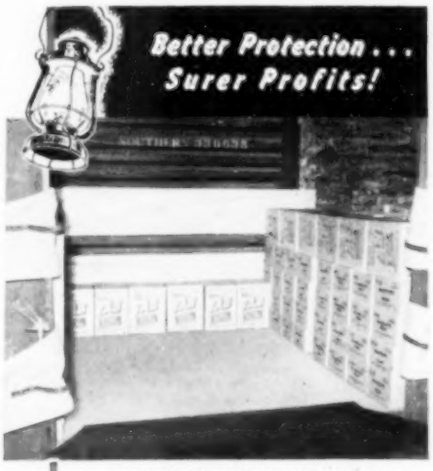
Dual Pump Unit Reservoir 360 cu. in.

Pressure range is 5,000 to 20,000 P.S.I. Pipe connections 1/4" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

WILLIAM S. PINE

1637 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 7496



Signode Retaining Strips are folded back out of the way during car loading, then brought together, tensioned and sealed from outside after loading. Retaining strips are inexpensive, easy to apply.

SIGNODE RETAINING STRIPS*

for freight car doorways

You don't make a dime in profits until your customers pay their bills. And they don't pay for products damaged at car doorways. That is why the manufacturer whose products are shown in the boxcar uses *Signode Retaining Strips.* They provide the quick, easy but *sure* way to stop doorway damage.

Signode Retaining Strips are used to protect full carloads of many commodities, including canned foods, packaged sugar, drugs, chemicals, cereals, insulation, fertilizers, cement, salt, lime, feed and seed.

For complete information about the use and application of Signode Retaining Strips, write today to

* TESTED AND APPROVED

SIGNODE

STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

SIGNODE

this means security in shipping

Offices Coast to Coast
In Canada: Canadian Steel Strapping Co., Ltd.
Foreign subsidiaries and distributors world wide.

If you write maker identify as IEN - 7498

Custom-engineered to meet your specific requirements, Wissco Metal Processing Belts are furnished in standard or special mesh constructions . . . in conventional and spiral weaves . . . and with rod reinforcements for high-temperature service. Supplied in correct metal or special alloy for resistance to heat, abrasion and chemical action.

For specific information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CF&I

If you write maker identify as IEN - 7499

PUT THIS 52-PAGE CATALOG TO WORK FOR YOU

Shows how to cut costs with unique thermostat . . . gives detailed explanation of installations . . . pictures wide variety of applications . . . a *fact-filled* guide.

Send today for your copy of this 52-page catalog on Fenwal THERMOSWITCH thermostats.

Learn how you, too, can cut costs in controlling humidity, radiant heat, pressure, vapor level, or other variables dependent on temperature.

Catalog gives complete explanation of the unique operating principle of Fenwal controls. Includes schematic diagrams — detailed breakdown of specific features — instructions on checking system under operating conditions — an entire section on selection and application of THERMOSWITCH controls.

Detailed specifications on all Fenwal products include modifications, special features, exact installation instructions with diagrams on installation — plus photographs of installations illustrating wide variety of applications.

You will find the Fenwal Catalog #400 a gold mine of helpful information. For your free copy, simply write Fenwal, Incorporated 77 Pleasant Street, Ashland, Massachusetts.

Fenwal

THERMOSWITCH®

Electric Temperature Control and Detection Devices

SENSITIVE...*but only to heat*

If you write maker identify as IEN - 7501

PACKAGING . . Scale controlled machine weighs small parts into containers

Source: INTER-LAKES ENGINEERING CO.
4843-47 Bellevue, Detroit 7, Mich.

Scale dial shows progress

The operator of this new Weight-O-Pack machine places an empty container on the platform of the scale mounted at the front and depresses a foot switch to start the filling action. This closes the circuit to a vibrator on a 3 cu. ft. materials hopper at the top of the assembly to start the material flowing into the container. Downward movement of the scale platform opens the vibrator circuit and stops further action when the container has been filled to within one or two pieces of the final required amount. The operator adds these pieces, removes the filled container and places a new one.

The machine is designed to handle work pieces such as washers, nuts, pins, screws, bolts. It will fill packages weighing not more than 10 lb. in standard construction. It can be specified for heavier unit weights. Overall dimensions are 28 by 25 by 72 inches. Caster mounting is illustrated.

If you write maker identify as IEN - 7502

MIXING . . Motor driven blender for dry materials of varying character

Source: PATTERSON-KELLEY CO.
485 Warren St., East Stroudsburg, Pa.

The bar is removable

Mixing action is promoted by addition of a new Intensifier Bar in the company's Twin-Shell blending equipment, previously described IEN-2075-50. The bar extends horizontally through the mixing chamber where it acts upon the top layer of the material being mixed. It is rotated by a separate motor at about 2,500 fpm. The new construction, including the bar, is available in units to 60 cu. ft. in capacity including the laboratory type assembly with the transparent housing as shown in the illustration.

A batch of material filled into the housing is divided and joined repeatedly as the L-shaped housing is rotated on its trunnion bearings. The machine is particularly suited to mix pharmaceutical compounds, sweeping compounds, paint pigments, insecticides, metal powders, ceramic glazes, soap powders, dies, gelatines, minerals, resins.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7503

IMMEDIATE DELIVERY
. . . WHY WAIT?

TO CHECK RPM
IN THEIR PLANTS
LEADING INDUSTRIES
Use **STICHT TACHOMETERS**
UNIVERSAL TYPE U
With 5 Ranges

BECAUSE THEY ARE
- **MOST ACCURATE**
- **DEPENDABLE**
- **RUGGED**
- **QUALITY BUILT**

CAT. NO. 303	CAT. NO. 322	CAT. NO. 346
30- 120 RPM	60- 240 RPM	120- 480 RPM
100- 400 RPM	200- 800 RPM	400- 1600 RPM
300- 1200 RPM	600- 2400 RPM	1200- 4800 RPM
1000- 4000 RPM	2000- 8000 RPM	4000-16,000 RPM
3000-12,000 RPM	6000-24,000 RPM	12,000-48,000 RPM

WRITE FOR BULLETIN NO. 750

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE, NEW YORK 7, N. Y.

If you write maker identify as IEN - 7504

CASH-ACME *Valves* DEMANDED BY INDUSTRY *Everywhere*

Type "A-31" Small Volume Pressure Reducing Valve

paper making equipment manufacturer specifies
CASH-ACME

Consistency is important in the pulp and paper industry. The proper density of the mixture determines the quality of the stock. The same holds true of CASH-ACME Automatic Valves . . . consistency of quality and performance make these valves an important addition to pulp and paper equipment. In fact, more and more industries are specifying CASH-ACME when there's a precision job of pressure reducing and regulating to be done. Write for free literature describing the part CASH-ACME Automatic Valves can play in the successful operation of your products.

CASH ACME SILENT SENTINEL *Automatic Valves*

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

If you write maker identify as IEN - 7505

HASTELLOY Alloy D Valves FOR HOT SULPHURIC ACID

HASTELLOY alloy D valve castings can be obtained with an ultimate strength of from 110,000 to 125,000 psi and hardness as high as Rockwell C-48. These castings have excellent resistance to sulphuric acid, in addition to their high strength.

Some Penetration Tests for HASTELLOY Alloy D in Sulphuric Acid #

Conc., per cent by weight	20 deg. C	75 deg. C	Boiling Point
10	0.00019	0.0015*	0.0011
25	0.00011	0.0011	0.00074
60	0.0000074	0.00026*	0.0074
85	0.00019	0.0039	0.025
95	0.000064*	0.0007*	0.035

inches per month. * aerated test

For information on HASTELLOY alloy D castings, and for the name of a manufacturer who can supply you with high-quality valves, write to our General Offices.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Hastelloy" is a trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 7506

Synthane's

your material— for moisture resistance

Need a material that's moisture resistant PLUS? Synthane laminated plastics may fill the bill. In addition to being practically impervious to water, our type of laminated plastics is also a good electrical insulator, hard, tough, dense, dimensionally stable, light in weight, chemical and abrasion resistant, and may be easily machined on standard wood or metal working tools. We have the experience and facilities for fast fabrication of parts. Find out more about Synthane—mail the coupon below today.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS - TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
Please send me the new Synthane Catalog without charge or obligation on my part.

Name _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN-7507

Users of **Resistance Welding** Need This **NEW Big Book**

Here, at last, is a catalog designed for a busy man to use—good, clear illustrations with contours and dimensions plainly shown—well-organized listings with prices right alongside the specifications.

Nearly 700 resistance welding electrodes are listed for alignat any welding job. The catalog also lists water-cooled holders of every style and size, seam welding wheels, alloy rod and bar stock.

If you do resistance welding, you need this book. Write for your free copy today.

WW WEIGER-WEED
Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan

If you write maker identify as IEN-7508

New BLACK SELF-CONTAINED DRILLING UNITS

NO SPLINES — Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS — New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES

NO REVOLVING WEIGHTS — Operate in any position. Wide range of speeds and sizes.

Write for complete information

BLACK DRILL COMPANY, INC.
1378 EAST 222nd STREET CLEVELAND 17, OHIO

If you write maker identify as IEN-7509

TWO-WAY STREET

Since we started making all types of gears nearly 50 years ago, our customers have told us they like what we give them.

Now this sort of thing is a two-way street. By lowering gear cost or increasing machine efficiency for our customers we give them that extra dividend so usable for something else. For our part, we feel that increasing repeat business is pretty conclusive proof of our ability to give the type of service we want to give. THE EARLE GEAR & MACHINE CO., 4707 Stenton Ave., Philadelphia 44, Pa.

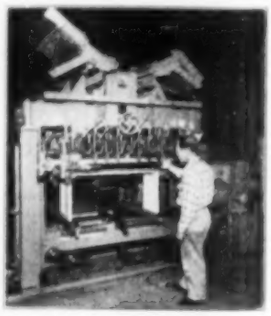
EARLE GEARS

It's good business to do business with EARLE

If you write maker identify as IEN-7510

NAILING . . Hydraulic machine assembles box ends, sides and bottoms

Source: FOOD MACHINERY & CHEMICAL CORP.
3073-77 12th St., Riverside, Calif.



"Box Framer" Bulletin

Box Framer designates this new hydraulic nail driving machine. It can be set up to drive 48 nails per stroke. It will assemble boxes measuring 19½ by 9 by 9 in. to 50 by 26 by 26 in., one per min. of the largest size. Adjustments for various sizes make the machine practical for runs as small as 25 boxes in a given size. Three strokes complete one box. Completed units are ejected through the open back to a conveyor to clear the machine for next assembly. Overall machine dimensions are about 8 by 5 by 10 feet.

If you write maker identify as IEN-7511

TRUCK . . Fork and platform designs, hydraulic lift by foot or by power

Source: BIG JOE MFG. CO.
182-86 N. Franklin St., Chicago 6, Ill.

Specifications on request

Forks, as shown in the illustration, or a platform can be specified with this new Model-14 hydraulic elevating truck. Also subject to specification is a foot operation for the lift movement or battery-powered motor drive, both of which are shown. In the latter case the truck includes a battery charger and a length of extension cord and plug for use when the truck is standing idle.

Bearings are ball or roller design. The frame is structural steel in welded assembly. Load capacity is 800 lb. with lift height to 52, 66, or 78 inches. Foot-operated brakes apply on the wheels to lock the truck.

Identify as IEN-7512

Dynel, the textile fiber developed by the Union Carbide and Carbon Corporation, now is standard with five industrial garment makers for worker clothing to resist attack by corrosive agents. It is available in fabrics that are warm for cold weather, cool for hot weather. Laundry life is excellent. Drying takes place quickly. No ironing is required. Want the garment makers' names?

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7513

Reels Just Go Rollin' Along To Job Or Storage

Why push, shove, pull or rely on jacks when the most efficient way . . . the quickest way . . . the most economical way is to use

ROLL-A-REEL

It's husky, long-lived, easily carried to reels, job or storage. The low slanted front and positive front lock insure quick loading or unloading.

Remove wire, cable or rope from top or bottom, front or back of reel.

Style A
2,000 lbs. cap. $37.50

Style B
4,000 lbs. cap. $75.00

• PROMPT DELIVERY ORDER NOW!

ROLL-A-REEL
327 West Fourth St. Cincinnati 2, Ohio

If you write maker identify as IEN-7514

Quality starts with a Superior Finish

The finish on your product reflects the craftsmanship, the quality of that item. That's why so many metal fabricators specify Haskins Flexible Shaft Machines for all their polishing, sanding, grinding, buffing, and filing operations. Like this manufacturer of stainless steel sinks, they have found that Haskins power and the right attachment provide precision operation that assures quality production.

Because you handle only a light handpiece—not a heavy motor—you find that operator fatigue is reduced, production goes up. And multi-speed power allows selection of the right speed for varied operations.

You'll find the right combination of power, speed and attachments for your specific application in the complete Haskins line. Write today and ask for our recommendation on your grinding, sanding, filing or polishing job—no obligation, of course. R. G. Haskins Co., 601 S. Washtenaw, Chicago 12, Ill.

haskins FLEXIBLE SHAFT EQUIPMENT

Your choice of mounting: Bench, Pedestal or Suspended

If you write maker identify as IEN-7515

Ledeen VALVE ACTUATORS

for POWER OPERATION and REMOTE CONTROL of Line Valves

• If you require automatic controls or power operation—or if your plant uses many valves in remote or inaccessible spots, you can save manpower and simplify your operations by installing Ledeen Valves. Adaptable to most any make, size and type of valve to operate against any line pressure, for any fluid medium, with any pressure. Positive, rugged, economical.

Write for Bulletin 512

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN-7516

Bulletin 8210

General Purpose Control Valves

- ★ Full Port Area—Packless
- ★ For Air, Gas, Water, Brine, Freon, Methyl Chloride, Light Oil and other Liquids and Gases up to 212°F, Pressures up to 400 pounds
- ★ Several Auxiliary Variations
- ★ Several Sizes: ⅛ to 2½ inches

Our Bulletin 8210 Solenoid Valves are designed for those shut-off requirements where a simple, rugged, automatic control will serve. They close instantly when current to the coil is cut off. Full line pressure on top of the valve piston aided by a powerful spring assures tight closing. They reopen fully when the coil energy is restored.

Bulletin 8211 Valves are similar except that they have Explosion-Proof Solenoids approved by Underwriters' Inc., Class 1, Group D, Hazardous Location.

ASCO Solenoid VALVES

If you have any automatic control problems that fit into the above class, study fully the merits of Asco Bulletin 8210 and 8211 Solenoid Valves. Write us anyway, regardless of your problems, because we have many other types of solenoid valves.

When in need of Electromagnetic Controls, come to us.
V-81-10

Automatic Switch Co.
383 Lakeside Avenue • Orange, New Jersey

If you write maker identify as IEN-7517

Increased Insulation
BETTER CONNECTIONS
JONES BARRIER TERMINAL STRIPS

Leakage path is increased—direct shorts from frayed terminal wires prevented by bakelite barriers placed between terminals. Binder screws and terminals brass, nickel-plated. Insulation, black molded bakelite. Finest construction. Add much to equipment's effect.

Jones Means Proven Quality

Illustrated: Screw Terminals—Screw and Solder Terminals—Screw Terminal above Panel with Solder Terminal below. Every type of connection.

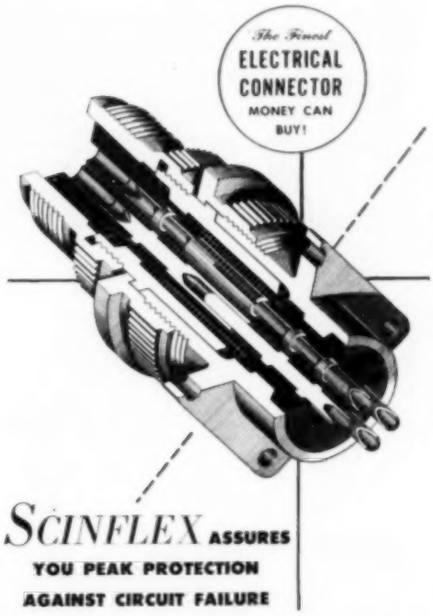
Six series meet every requirement: No. 140, 5-40 screws; No. 141, 6-32 screws; No. 142, 8-32 screws; No. 150, 10-32 screws; No. 151, 12-32 screws; No. 152, ¼-28 screws.

Catalog No. 18 lists complete line of Barrier Strips, and other Jones Electrical Connecting Devices. Send for your copy.

Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION

If you write maker identify as IEN-7518



SCINFLEX ASSURES YOU PEAK PROTECTION AGAINST CIRCUIT FAILURE

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX ELECTRICAL CONNECTORS

Bendix

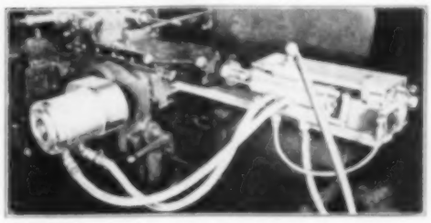
SCINTILLA MAGNETO DIVISION of Bendix AVIATION CORPORATION
SIDNEY, NEW YORK

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.
FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brewster Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN-7520

LATHE ATTACHMENT . . Hydraulic drive operates turret in automatic cycle

Source: VIKING INDUSTRIES
218-22 Montague St., Rockford, Ill.



The operator watches

Hydraulic motor mounts on the capstan-wheel shaft of any standard hand-operated 6-position lathe turret. The motor connects through a control assembly mounted at the rear of the turret to a pair of motor-driven hydraulic pumps that are assembled with a reservoir in a floor-mounted unit to position at the end of the lathe.

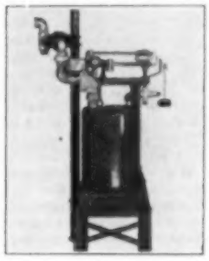
The new equipment can be applied on lathes with bar stock capacity to 2½ inches. It can be assembled with any standard make of ram-type turret. The operator starts a cycle by moving a hand lever. Stopping takes place automatically after a predetermined series of operations.

Each turret position can be set up for its own cycle of rapid approach, dwell, infinitely adjustable feed, and quick return. While a cycle is in progress the operator is free to inspect and prepare the next work piece.

If you write maker identify as IEN-7521

PACKAGING . . Filling machine weighs liquid into containers

Source: VOL-U-METER CO.
P. O. Box 54-A, Buffalo 16, N. Y.



Operator starts the cycle

Model 1359 is a new assembly of solenoid-operated valve platform scale and actuating mercury switch. It takes liquids from an overhead source, delivers them by weight into containers ranging in size from 1 pt. to 15 gal. where gross weight is not in excess of 250 pounds. The beam poises can be set to 15 lb. in 1-oz. divisions and to 50 lb. in ½-lb. divisions. The valve is opened manually for delivery into a container. It closes by solenoid action when the beam rises at a predetermined weight to operate the mercury switch and complete a circuit.

Valve nozzles are interchangeable to fit openings from ¼ to 1½ inches. The valve intake is threaded for standard 1½-in. pipe and is adjustably supported vertically and horizontally on a pipe column beside the scale. The valve can be swung on the pipe so the opening can be located as required. The scale platform measures 12 by 15 in. and can be equipped with rollers when specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7522

better paint job with **Red Devil Paint Conditioner**

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion (22 shakes per second) puts pigment in perfect suspension—quick!

NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, or *hard-to-keep-mixed blends*, Red Devil can arrange to have test samples agitated at a nearby location.

Various models provide automatically-timed agitation for ½ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of **Red Devil Tools,** 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN-7523

Now's THE TIME TO GET READY for WINTER!

Make your plant a comfortable, productive place to work next winter — install "Buffalo" Unit Heaters now! They throw quick heat where you want it. Quality built, with efficient "Buffalo" Fans and Aerofin coils. WRITE FOR BULLETINS 3137-D and 4704 — solve next winter's heating problem now and be sure!

TAKES NO FLOOR SPACE! "Buffalo" Suspended Lumber Heating and Ventilating Unit

"Buffalo" UNIT HEATERS

Compact BREEZO-FIN Unit Heater

For Large Areas! "Buffalo" Highboy Unit

BUFFALO FORGE COMPANY
490 BROADWAY BUFFALO, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN-7524

NEW JACK LOCATES ON ANCHOR BOLT — *Empco JACK* STYLE JS

- SELF-ALIGNS TO UNEVEN FLOOR
- EASILY LIFTS 8,000 LBS.
- SIMPLY TURN ADJUSTING NUT TO RAISE OR LOWER MACHINE
- VI-SORB MOUNTING PADS ABSORB VIBRATION

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level. Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ⅝" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.
Available in three sizes: 1⅝", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.
Write for specifications and prices of complete line of Empco Leveling Jacks.

EMPCO PRODUCT

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN-7525

Improved Method Centrifugal **SPRAY DRYER and CONCENTRATOR***

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

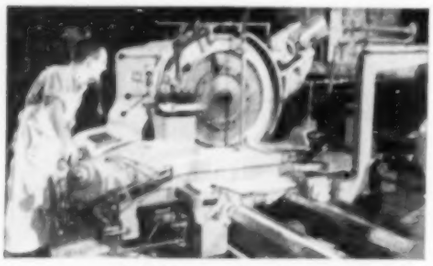
*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

3638

DRYING and CONCENTRATING CO.
111 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 7526



Maintain good lighting and reduce spoilage by holding proper voltage with G-E Inductrols

(dry-type induction voltage regulators)

Your plant lighting operates best at rated voltage. If, for example, voltage on incandescent lamps drops 10% below normal, lamp brilliance decreases 30% — and workmanship suffers. If voltage rises 10% above normal, lamp life decreases 70% and replacement costs go up. And where fluorescent and mercury vapor lamps are used, similar adverse effects occur.

That's why it pays to install G-E Inductrols. These new dry-type voltage regulators automatically maintain correct voltage for your plant lighting and other electric equipment, thus assuring peak operating efficiency.

For more information on Inductrols, contact your local G-E sales representative or authorized agent. Write for bulletins GEI-715, GEI-796, and GEB-341, *General Electric Company, Schenectady 5, New York.* 4-4-52

G-E Inductrols are ideal for light-dimming applications.

GENERAL ELECTRIC

If you write maker identify as IEN - 7527

INCREASE PRODUCTION.. SAVE TIME & MONEY ON YOUR DRILLING OPERATIONS

MEYCO

Carbide Inserted Bushings last longer, cost less in the long run

Here is a bushing that combines the best features of steel and carbide: the strength of steel and the long life of carbide. First cost slightly higher than ordinary steel bushings, their life many, many times as great. In addition to such obvious savings, MEYCO bushings increase the life of drills and reamers, produce accurate work for a longer period of time, save on machine-down time and on nonproductive man-hours.

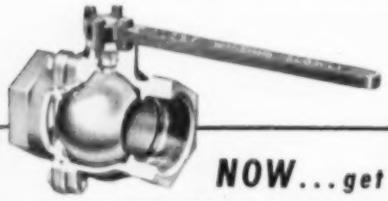
☆

Auto manufacturer says: "... the steel bushings previously used averaged about 28 hours life. MEYCO bushings ran 1,168 hours before they were unusable."

For information and prices write for Meyco Bushing Catalog No. 18.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

If you write maker identify as IEN - 7528



NOW... get FULL ROUND FLOW *in a quarter turn*

Designed to step up valve performance in every detail of operation, Rockwood Ball Valves are making good in a wide range of services. Chief reason is the chrome-plated floating bronze ball that assures a full *round* flow . . . enables quick opening and closing . . . resists wear longer . . . stays leakproof.

Ideal for handling water, air, carbon dioxide, nitrogen and other gases, paraffin and asphalt base petroleums, alcohol, paper fluids and many other types of fluids and gases. Approved by Underwriters' Laboratories, Inc. For further details, send for free Bulletin V-4.

Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 7529

CRANE . . Twin hook assembly for operation over a process tank

Source: AMERICAN MONORAIL CO. 13111 Athens Ave., Cleveland 7, Ohio

Typical specification job

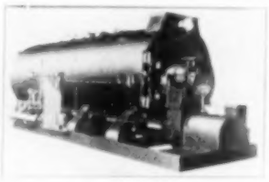
Special assembly of a 3-ton Electrolift twin-hook hoist and the company's Mono-Rail crane forms a new combination to handle wire coils into and out of a processing tank. Overall crane length is about 12 ft. with track span at a little over 13 feet.

Travel drive is by a pneumatic-tired wheel and motor for operation on the crane-way at 125 feet per minute. Control centers at a pendant pushbutton station. Lifting speed is 24 feet per minute. Anchor type hooks are employed to engage with hair-pin loops on the frame carrying a load of wire coils.

If you write maker identify as IEN - 7530

BOILER . . Self-contained design, 18 to 500 bhp., oil-gas fired design

Source: CYCLOTHERM 161-5 E. First St., Dept. 29, Oswego, N. Y.



Ready to operate

The company announces addition of an improved steam-operated oil preheater to permit its 500-hp. self-contained boiler to operate on heavy oil. The heater assures constant flow and unvarying temperature to the burner nozzle. The boiler can be placed in full operation within ½ hr. following a cold start. The overall line includes units rating from 18 to 500 hbp. for operation on 15 to 200 lb. pressure.

The burner fires into a centrally located steel chamber. Air is introduced tangentially to form a rotating cylindrical flame body. Products of combustion return from the rear of the chamber through fire tubes to an outlet connection at the front. The fuel oil is circulated in a closed loop between the burner and a storage tank so oil that is not consumed is returned to the tank.

Identify as IEN - 7531

It is costing you 72 cents per month for electric current to operate your home television set if you are using it on an average of 90 hours per month and if current cost is 4 cents per kilowatt-hour. How do we know? By reading the little G-E slide chart listing home appliances on one side and farm equipment on the other with current requirements for each.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7532

FRUSTROSITY* CASE No. 68: Mr. Wrongflo and his process are both suffering. If he had a 1952 Brookfield Viscometer at hand, he would know all the viscosity answers — *could make determinations directly in centipoises in a matter of seconds in lab, plant, or both.* Whether the materials you work with are Newtonian or non-Newtonian, you owe it to your wife, customers and co-workers to get up-to-date information on Brookfield Viscometers *adaptable to any problem from less than one to 32,000,000 centipoises.* Ask your Lab Supply House or drop a line to Dept. G, Brookfield Engineering Laboratories, Inc., Stoughton, Mass.

*FRUSTROSITY is that frustrated condition a man gets into when his problem is Viscosity Determination or Control and he hasn't asked BROOKFIELD.

If you write maker identify as IEN - 7533

FOR *Strictly* IMPERSONAL INSPECTION CHOOSE AMES DIAL COMPARATORS

Ames Dial Comparators make the inspection of duplicate parts an extremely simple, rapid and accurate operation. Ames Comparators are strictly impersonal in their accuracy — the results being in no way dependent on the skill or judgment of the operator. The pressure of the gauging members against the work is mechanically determined and therefore uniform.

Check the Ames Dial Comparators shown — one of them may solve a Quality Control problem for you.

Ames No. 1 is an easily adjustable bench model dial comparator that measures objects up to 2" in cross section. This comparator is designated Ames No. 1-W when equipped with a dead-weight and contact to ASTM specifications for measuring resilient materials.

Ames No. 2 is a compact bench model dial comparator for measuring sheet metal, glass, hard rubber. Ames No. 2-W is similar, but is furnished with dead-weights and contacts to ASTM specifications for checking textiles, plastics, sheet rubber, etc.

Ames No. 13 features flat ground, cast-iron base of ample size for using V-blocks and locating fixtures. The No. 13 can be fitted with a fine adjustment for close setting. Adjustable bracket holds any Ames Indicator.

Ames No. 130 is designed especially for inspecting comparatively large and odd-shaped parts. For this reason, the flat ground steel base, the adjustable indicator support, and the upright column are proportioned to the user's requirements.

Send us your Quality Control job specifications, and we will supply complete details and proposal without obligation.

Representatives in principal cities. **B. C. AMES CO.** 13 Ames Street Waltham 54, Mass.

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

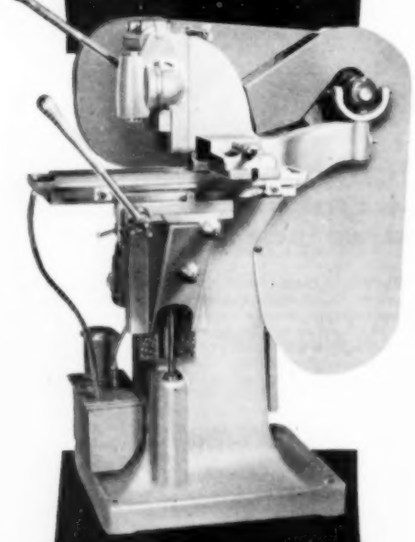
If you write maker identify as IEN - 7534

Equally Economical and Efficient

for one-of-a-kind or a million of the same milling operations

U.S. NO. 1

ALL-PURPOSE, HAND-FEED MILLING MACHINES are adaptable to specialized production jobs with a variety of automatic devices.



Our suggestions as to how a U. S. No. 1 Milling Machine can cut costs on your particular production needs, as well as complete data on the basic machine and attachments, gladly furnished on request.

United States

MACHINE TOOL CO.

A Division of U. S.-BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5, CINCINNATI 27, OHIO

If you write maker identify as IEN - 7536

CHALLENGE SURFACE PLATE EQUIPMENT

PRECISIONED FOR YOUR PRECISION NEEDS!

ANGLE PLATES Provide a practical and versatile method for clamping and holding work. Challenge plates are made of high grade, fine-grained semi-steel—special heat treated and precision ground to an accuracy of .0005-inch. Made in 22 sizes, from 2½x6x12 inches up to and including 18x18x18 inches.

BOX PARALLELS: Special heat treated and precision ground to an accuracy of .0005-inch.

V-BLOCKS: Recommended for supporting shafts and other cylindrical work when drilling, checking, inspecting, etc. Made of fine-grained semi-steel castings. Special heat treated, precision ground. Ribbed sides.

RIGHT ANGLE IRONS: Made of fine grain special analysis semi-steel, specially treated. End and sides are precision ground both square and parallel.

STRAIGHT EDGES: Scientifically shaped and ribbed to retain accuracy. Made of special analysis semi-steel.

Write for complete information and prices. 684

THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 7537

PRODUCTION UP COSTS DOWN WITH Commander PRODUCTION TOOLS

Adjustably MULTI-DRILL

- Adjustable To Any Hole Pattern
- Drill 2 to 8 Holes at 1 Stroke
- Fits Any Drill Press

MODEL 900

Increase production up to 800%—save time, cut costs. Mounted without alterations or special tools. 9" drilling area; centers to ½". Extension Spindles available to increase area to 22½". Special adaptations available.

"the tapper that thinks for its operator"

Commander TAPPER

- Wider Range...1 Tapper Handles #0 to ¾" Taps
- Automatic Tap Protection
- Furnished to Fit Any Drill Press

Adjustable full range torque control instantly stops any tap when it's dull, loaded, strikes a hard spot, or bottoms in blind hole tapping. Assures maximum production, cuts rejects, even with inexperienced operators.

DRILL CHIP BREAKER

- Drill SHALLOW or DEEP Holes up to 400% Faster
- Drill 10 diameters or more in depth without clearing drill
- Better, Smoother, More Accurate Holes

Ordinary Chips

Chip Breaker Chips

Write FOR CATALOG #851 and the name of your nearby Commander Distributor

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 7539

GRINDING . . Abrasive belt machines take belts ranging from ¼ to 4 inches

Source: CURTIS MACHINE DIVISION
1302 E. 2nd St., Jamestown, N. Y.

Model 400 and Model 500

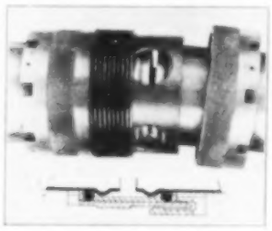
Work is ground against the abrasive belt in both of these new machines while the belt is backed up by a contact wheel riding a ball bearing spindle. Drive is by a motor mounted inside the machine housing. A vertical handwheel adjustment sets correct belt tension or relieves it for belt change.

The smallest machine, to the left in the illustration, takes belts from ¼ to 2 in. in width. It occupies floor space measuring 18 by 24 inches. The larger machine takes ½ to 4-in. belts and contact wheels from 2 to 18 in. in diameter. It measures 27 by 50 in. at the floor line. Belt speed is approximately 7,000 ft. per minute.

If you write maker identify as IEN - 7540

TUBE FITTING . . Compression coupling to join the ends of two lengths of tube

Source: E. B. WIGGINS OIL TOOL CO.
3422-26 E. Olympic Blvd., Los Angeles 23, Calif.



Angularity to 3 degrees

Metal ring, carrying holes around its circumference to minimize its weight, is made with inward-facing flanges to form the central member of this new Flexomatic coupling. It presses into place over outward facing beads rolled into the two joining tube ends. It holds the tubes against pulling apart and relieves the O-rings that form a part of the assembly from carrying this end pressure.

The O-rings are enclosed in recesses in the male and female outer portions of the coupling. They bear against the center member when these parts are screwed together to complete the joint.

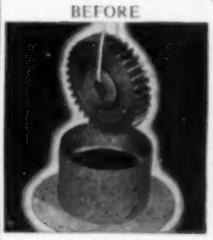
Nine sizes in the line apply on 1 to 4 in. tube. Weights are 0.086 to 0.810 lb. without the O-rings. The coupling will handle pressures to 375 pounds. It is suited for operation in temperatures between minus 65 and plus 400 deg. F. It is intended particularly for use in aircraft, on fuel and oil lines. It permits tube-end separation to ½ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7541

HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE



Dip

SECONDS AFTER

Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

If you write maker identify as IEN - 7542

LISTEN TO YOUR COMPRESSOR

frequent running costs you money!

CHAMPION

aero-dynamic design . . .
cuts running time 6 ways!

Compressors that run too frequently cost you money! Excessive running causes excessive wear, raises electric costs by increasing consumption, and slows work through reduced pressure. Champion Air Compressors are Aero-Dynamically engineered to deliver cool air to the receiving tank in a minimum of running time. Get all the facts on Champion's Aero-Dynamic Compressor design.

this FREE MANUAL shows you how to select the proper air compressor. Write for your copy TODAY!

CHAMPION PNEUMATIC MACHINERY CO.
844 N. Pleasant Street Princeton, Illinois

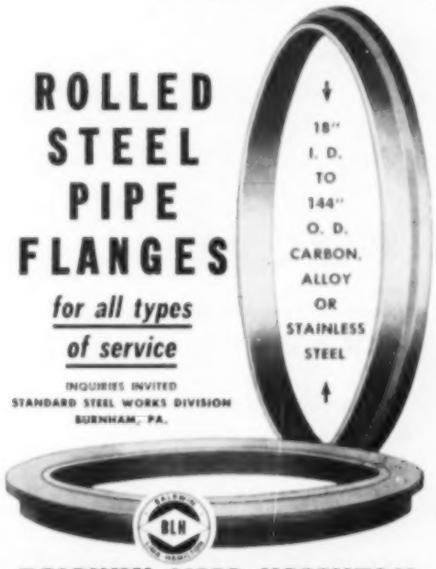
PRESSURE CLEANERS • AIR HOSE REELS • AIR ACCESSORIES

If you write maker identify as IEN - 7543

ROLLED STEEL PIPE FLANGES

for all types of service

18" I. D. TO 144" O. D. CARBON, ALLOY OR STAINLESS STEEL



INQUIRIES INVITED
STANDARD STEEL WORKS DIVISION
BURNHAM, PA.

BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. Offices in Principal Cities

If you write maker identify as IEN - 7544

Unbreakable "workhorses"

STRONGER, SWIFTER **ForgeWelds**

Brute strength and fluid smoothness—you get *both* in ForgeWelds. Day-in and day-out—under heaviest loads and relentless pounding—these extra-tough casters keep rolling on. And how they roll! Hauling units equipped with ForgeWelds glide along on the finest ball bearing swivels and roller bearing wheels . . . speed up handling in any plant. What's more, once those "workhorses" are on your trucks, replacements will be rare indeed. ForgeWelds come in all types and sizes for all needs.

Makers of: Power Lift Truck • Hand Lift Truck Lifters • Cranes • Dollies • Skid Trucks & Trailer Casters • Wheels

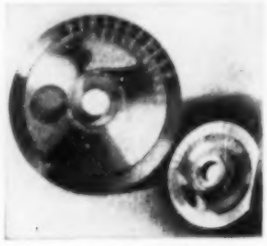
SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.
See Your Classified Telephone Directory For Nearest Distributor

If you write maker identify as IEN-7545

NEW! ANDERSON SPEEDI-BALANCER

ADJUSTABLE BALANCING DISC for Grinding or Polishing Wheels



2 SIZES

No. 10 to fit arbors from ½" to ⅞"
No. 15 to fit arbors from 1" to 1¼"

- Speedi-Balancer replaces collar on one side of grinding wheel.
- Compensates for "out of balance" by simple setting arrangement.
- Fast balancing of all types of grinding and polishing wheels.
- Ideal for pre-setting balance of wheels in stock.
- Easily removed for use on other wheels of similar arbor sizes.
- For arbor sizes ½" to ⅞" and from 1" to 1¼".

Specify exact size of shaft hole when ordering

No. 10—$8.50 each No. 15—$13.70 each
. . . also BALANCING WAYS in 5 sizes—20" to 96" swing
WRITE FOR BULLETIN 7-35

Anderson BROS. MFG. CO.
ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

If you write maker identify as IEN-7546

Around the World it's

HOOVER BALLS

made of
CHROME STEEL - CARBON
STEEL - STAINLESS STEEL
BRASS - BRONZE AND
MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL AND BEARING CO.
Ann Arbor, Michigan

If you write maker identify as IEN-7547

Here's a new lightweight cutter, built to cut flat steel strapping easily, quickly and safely.

It's Acme Steel's new E14A0 Strap Cutter. It weighs just one pound and it's only 9½ inches long—but it cuts steel strapping up to ¾ inch. Won't dig into carton or bale. Built-in band guide keeps strap from turning on edge or wedging between blades.

If your receiving room gets strapped packages—and who doesn't?—you need this new cutter. Call the Acme Steel service office nearest you, or write Acme Steel Products Division, Dept. IEN-72.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois
ACME STEEL

If you write maker identify as IEN-7548

FURNITURE . . Steel work bench, steel, Presdwood or laminated wood top

Source: STANDARD PRESSED STEEL CO.
P. O. Box 555, Jenkintown, Pa.

Workers will like it

Length is 5 and 6 ft., width is 24 and 30 in. for the top unit in the company's new Series-640 line of work benches. The top is made of steel, of steel covered with Presdwood or of laminated wood only. It mounts on steel cabinet units which are available in shelf design and also in a drawer design, previously described IEN-2371-52. The cabinets mount on bases 4½ or 6¾ in. in height for an overall bench height of 31¼ or 33½ inches.

Drawer dimensions are 14 by 20 by 5 inches. Inside dimensions of the shelf-type unit are 14 by 20 by 20½ inches. Assemblies can be made in any desired combination of the cabinets and tops to provide individual benches or continuous runs.

If you write maker identify as IEN-7549

HEATING . . Electric furnace fires ceramics, to 2,200 deg. F.

Source: K. H. HUPPERT CO.
6856 Cottage Grove Ave., Chicago 37, Ill.

$370 to $5,815

Seven sizes are included in a new line of electric furnaces particularly designed to fire ceramics. The smallest measures 8 by 10 by 12 in. The largest is 30 by 72 by 36 in. in inside dimensions. Temperature is to 2,200 deg. F. Automatic or manual control can be specified.

The housing is made of welded steel mounted on an angle-iron frame, finished in green Hammerloid. The interior is lined with insulating refractory backed by high-temperature insulation. The heating elements are Kanthal non-oxidizing, non-flaking coiled alloy wire. The hinged door at the front provides clear access to the interior. It is equipped with a heating element as well as the sides, rear and floor.

Identify as IEN-7550

Nylon can be machined in manufacture of precision parts of the solid material and broaching is one of the major operations that can be employed to advantage. Colonial Broach Company has collected a good fund of "evidence" on the subject and will advise you. The material is particularly suited for certain machine parts because it will operate for considerable periods without any lubrication.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7551

THERE'S A PLACE IN YOUR PIPING FOR

WECO... WING UNIONS

- Ball and cone seating of male and female sub provides unequalled sealing ability.
- Heavy acme threads on female sub and wing nut make up fast, resist damage and distortion.
- Sub walls are extra thick for protection against distortion, vibration, shock and surge pressures.
- Available in sizes 1" through 10"; test pressures from 1000 psi through 15,000 psi.

Ask your WECO or CHRISAN Representative or write for WECO catalog of the most complete line of wing unions in the world.

WECO
WELL EQUIPMENT MFG. CORP.
HOUSTON 1, TEXAS
CHRISAN COMPANY

If you write maker identify as IEN-7552

KLEMP Open Steel Grating "PATHS" speed maintenance!

Can be fitted into any area, at any height, to form a non-skid, self-cleaning, fireproof catwalk, walkway, or structural flooring "path" that gives quicker access to machinery. Permits free passage of light and air. Klemp Diamond Riveted Open Steel Grating comes pre-fabricated—cut to your specifications, ready to install. It contains more steel per square foot by weight... you can't find a stronger grating! Write today for our 24-page bulletin containing handy engineering data.

Ask about Klemp Hexteel heavy-duty surface armor.

KLEMP
KLEMP METAL GRATING CORP.
Steel Flooring Specialists
6605 SO MELVINA AVENUE • CHICAGO 38, ILLINOIS

If you write maker identify as IEN-7553

IMMEDIATE DELIVERY WITHOUT REBORING!

FORT WORTH ROLLER CHAIN SPROCKETS WITH INTERCHANGEABLE HUBS

"QD" TYPE "DH" TYPE

INDUSTRIAL DISTRIBUTORS CAN DELIVER FROM STOCK WITHOUT DELAY FOR REBORING

FORT WORTH *Sprockets Offer Many Advantages*

- Actually Fits Shaft Better
- Reduces Cost of Spares
- Simplifies Changes
- Cuts Replacement Costs

HUBS ALSO FIT FORT WORTH TRANSCO V-BELT SHEAVES

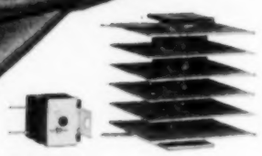
FORT WORTH STEEL AND MACHINERY CO.
Dept. 27, 3600 McCart, Ft. Worth, Texas

CATALOG 300-C
Shows list prices and dimensions of stock QD & DH sprockets. Chain dimensions and drive recommendations are in easy-to-use form.

If you write maker identify as IEN-7554

Sarkes Tarzian

"Centre-Kooled" SELENIUM RECTIFIERS



THE SELENIUM RECTIFIER "BIBLE"

Most complete book of its kind ever published . . . 80 pages valuable information about Selenium Rectifiers . . . 48 pages of Radio and Television circuit diagrams . . . 20 pages on Power Rectifiers . . . 3 pages on High Voltage Rectifiers . . . a 7 page cross index replacement guide. Send 50c for your copy or see your distributor.

Sarkes Tarzian, Inc., RECTIFIER DIVISION
Dept. B-3, 415 N. College Avenue
Bloomington, Ind.

If you write maker identify as IEN - 7555

WEBBER

TRADE MARK REGISTERED

INDUSTRIAL

FREEZERS

For Shrink Fit·Stabilization of Metals·Hardening and Testing with Temperatures as low as -165°F.

Patents Pending

36 STANDARD MODELS

. . . or built to your specifications at no additional cost

A FREEZER FOR EVERY NEED

Write for more complete information
Representatives in Most Cities

Used in many of the largest industrial plants, Webber Industrial Freezers are performing heavy-duty, dependable service with extreme accuracy at temperatures as low as -165°F. Lengthens life of valuable cutting tools, eliminates "heat-and-hydraulic-press-fit" methods by the use of shrink and press-fit methods, eliminates warpage and high rejection rate, common with other methods, saves cost of dry ice, amortizes itself in less than one year. Speed production—Save time—Save money with Webber Industrial Freezers.

INDUSTRIAL FREEZER DIVISION
WEBBER APPLIANCE CO., INC.
8-2745 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 7556

Kimpak® Float Packaging

TOOL SET
Snap-on Tools Corporation

Cuts shipping costs—reduces damage in transit!

Do you handle your product with extreme care during the manufacturing process—then trust it to outmoded, inferior quality cushioning materials after it leaves your shipping room? You may not be able to answer that question if you haven't seen KIMPAK® Float Packaging at work.

It's the modern way to ship anything from delicate glassware to furniture and appliances; from tools and hardware to flowers and food. It's also one of the most efficient packaging methods in the world—giving optimum protection at minimum cost.

KIMPAK creped wadding is as neat, clean and easy to apply as wrapping paper. It's designed to absorb continuous vibration, ward off severe shocks, cushion and defend your product against roughest handling. This highly efficient cushioning material protects the finest finish from scratching, bruising, pressmarking and "burning."

Call your KIMPAK distributor today for further information, or write to Dept. IEN, Kimberly-Clark Corporation, Neenah, Wisconsin.

Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES
CELLULOSE WADDING

*REG. U. S. PAT. OFF.

If you write maker identify as IEN - 7558

STRAPPING . . Power dispenser for ¾, 1¼ and 2 in. steel strap

Source: SIGNODE STEEL STRAPPING CO.
2630 N. Western Ave., Chicago 47, Ill.

Control at pushbutton

A coil of steel strap is applied on the tilted rotating member of this new motor-driven dispenser. It is held in place back of a hinged door. It issues from the inside of the strap coil through a guide to a hand-operated cut-off. The motor operates in connection with a Dodge speed reducer to feed the strap out at a rate of 6 to 10 ft. per second. Operation is controlled by a Stearns magnetic disc brake. The cutter is equipped with alloy-steel reversible blades. Overall dimensions are 5 by 3 by 3 feet. Weight is 874 lb. empty for the new dispenser.

If you write maker identify as IEN - 7559

LIGHTING . . Fluorescent lamp, standard cool white, rates 40 watts

Source: GENERAL ELECTRIC CO.
1 Nela Park, Cleveland 12, Ohio

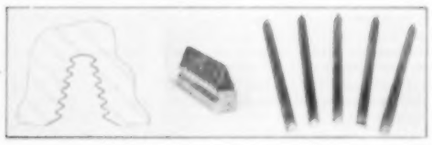
List price is $1.10 per lamp

Rapid Start designates a new fluorescent lamp in which a number of units controlled by one switch will light within about 1 sec after being turned on and will not blink or flicker at any time during life in service. The new unit is designed for use with a special ballast and is intended only for new lighting installations. It operates in series, two on one ballast. Construction includes a triple-coiled cathode and a water-repellent coating to promote prompt starting.

If you write maker identify as IEN - 7560

BROACHING . . Form cutters for aircraft jet engine wheels

Source: EX-CELL-O CORP.
1202 Oakman Blvd., Detroit 32, Mich.



Available for specified use

Pine Tree slots, employed to anchor the blades in jet aircraft engine wheels, are cut in a standard broaching machine by means of these new form cutters. Individual teeth take substantial cuts in order to minimize rubbing that causes work hardening. Each broach is designed to meet the requirements of a given installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7561

HANDY TOOL LIFTS AND PULLS EASILY

'Tugit' makes light work of thousands of jobs. It is small, portable — works fast, smoothly at any angle in tight spots and the wide-open spaces. That is why the 'Tugit' Hoist is used for everything from holding material for welding to pulling tree stumps and stretching cable.

Want to move a load 3/32"—or 1/4"—at a time? Get a 'Tugit' Hoist! It has the powerful, easily controlled action made possible by spur gears, automatic load brake and anti-friction bearings. A pull of only 40 pounds on the lever moves one ton. Non-kicking handle assures safety.

The handiness of the 'Tugit' saves time, effort, money in all kinds of repair, maintenance, and installation work. One and two-ton sizes available. Write for a copy of Bulletin No. 388 for complete details about the 'Tugit' Hoist.

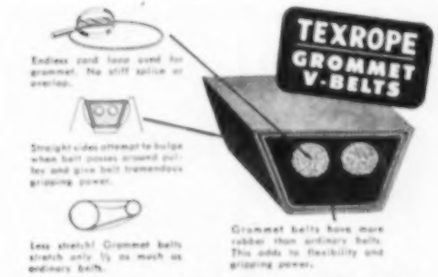
MM

'TUGIT' HOISTS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves and 'American' Industrial Instruments.

If you write maker identify as IEN - 7562



Get 20-50% Longer Belt Life!

TEXROPE GROMMET belts cost same as ordinary belts yet last longer, grip better!

Patented grommet belts last 20 to 50% longer than ordinary belts, depending on the service. The more severe the service, the greater the increase over ordinary belts. The reason? There is no overlapping cord section as in ordinary belts.

In addition, *Texrope* grommet belts have more rubber in relation to belt size than ordinary belts. Without that stiff overlap, they're more flexible, grip pulleys better. Size for size, grommet belts give ⅓ more gripping power, pull heavier loads with greater safety factor.

Call your nearby Allis-Chalmers distributor or district office and specify *Texrope* grommet V-belts. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Texrope is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-3714

If you write maker identify as IEN - 7563

WILLSON Safety Spectacles

Keep You on the Safe Side

Popular WK Plastic Frame Style with

- WILLSON Super-Tough* Lenses — flat or curved, clear or green
- Hi-Line, half-plastic cable temples
- Non-flammable, sheet stock plastic frame
- Two lens sizes, four bridge sizes

*Reg. U. S. Pat. Off.

More than 300 other Eye and Respiratory Safety Devices carry this trademark

WILLSON®
Dependable Products Since 1870

WILLSON PRODUCTS, INC. • 217 Washington St., Reading, Pa.

If you write maker identify as IEN - 7564

an ACCO product

Speed that Load!

• Save effort, speed material handling with the completely modern WRIGHT *Speedway* Hoist for hook, lug, or trolley suspension.

The *Speedway* has long life, requires little maintenance. It has alloy steel gears, self-lubricating ball and roller bearings, preformed cable, grooved drum, weatherproof wire conduits, silver contact controls, plus other features.

See your distributor today or write us for literature.

WRIGHT Hoists Trolleys Cranes

ACCO

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE
York, Pa. Chicago, Denver, Detroit, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

If you write make identify as IEN-7565

IT'S A Beauty!

NEW SQUARE D REVERSING DRUM SWITCH

WITH A LOT OF IMPORTANT FEATURES

Compact Size • Large Screw type Terminals • Replaceable Terminal Blocks • Convertible from Maintained Position to Spring Return • Positive Shock-proof Indexing • Single Captive Cover Screw • Generous Wiring Space • Two ½" Conduit Openings at Bottom • Front or Rear Handle Operation • Large and Legible Nameplate

Write for Bulletin 2601-A, Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write make identify as IEN-7566

HANSEN COUPLINGS

GIVE YOU 2 Big Advantages

● With Hansen couplings you save precious minutes every time you change air tools—every time you connect or disconnect a fluid line carrying gas, liquid or grease.

To connect, you merely push plug into socket—flow starts instantly. To disconnect, pull back sleeve on socket—coupling disconnects. Flow is shut off instantly and automatically.

Available in a wide range of sizes and types, each type engineered to meet the specific requirements of your particular application.

One-way shut off, two-way shut-off, and straight-through types.

Write for Catalog

THE HANSEN MANUFACTURING COMPANY

4011 WEST 150TH STREET • CLEVELAND 11, OHIO

If you write make identify as IEN-7567

Femco COMMUNICATION

"Four locomotives now haul more coal faster than five did before we had Trolleyphones."

FOR MINES FOR MILLS

Easy to Buy • Easy to Install • Easy to Use • Make Us Prove It

Femco TROLLEYPHONE

Uses existing wires and power supply to provide clear voice communication over loud speakers. Bulletin No. 25.

Femco AUDIOPHONE

Wherever wires can be laid or run you can have Femco Audiophone systems installed. Bulletin No. 26

LOW COST • LOW MAINTENANCE

"YOUR VOICE OF ACTION"

FARMERS ENGINEERING & MANUFACTURING COMPANY

549 Brushton Ave., Pittsburgh 21, Pa

If you write make identify as IEN-7568

TESTING . . Bridge type meter reads resistance, 0.05 to 50,000 ohms

Source: HERMAN H. STICHT & CO. 24 Murray St., New York 7, N. Y.

Fits in your pocket

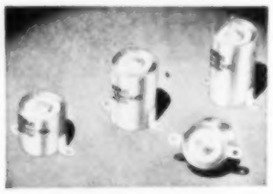
A resistance that is to be measured with this new Type-Z instrument is connected across the binding posts at the base of the galvanometer on the left-hand side of the housing face. Desired ratio is selected in any one of six steps between 0.01 and 1,000 by positioning a plug in one of the six holes in the center of the face. The slide wire knob to the right is then turned until the galvanometer reads zero. At this point the graduations on the knob, multiplied by the number at the plug, will read resistance, accurate within 1 per cent.

The meter is assembled in a plastic housing that measures 9 by 4¾ by 2¾ in. and weighs about 3 pounds. Power is supplied for dc. operation by a 4.5-volt flashlight battery enclosed in the housing. An auxiliary plug-in buzzer and headphones are available for ac. measurements.

If you write make identify as IEN-7569

CAPACITOR . . Precision ceramic, hermetically sealed in metal tube

Source: SPRAGUE ELECTRIC CO. 165 Marshall St., North Adams, Mass.



Details in Bulletin 607

Stacks of ceramic dielectric discs with silver electrodes fired on at high temperature are impregnated and hermetically sealed in 1-in. diameter plated metal shells in construction of this new Type-B Sprague - Herlec capacitor. The metal tube is equipped with mounting feet at the end opposite the center terminal. The outer case is the ground terminal. Extreme stability makes it possible to control capacitance and temperature-coefficient tolerances within very close limits.

Hermetic sealing permits the unit to operate satisfactorily in a temperature range between minus 55 and plus 85 deg. C. Intended applications are in high-stability oscillator circuits and in electronic instruments requiring exact performance.

Identify as IEN-7570

Thousand gallon tanks to mount on a truck and carry gasoline or diesel oil, and hundred gallon tanks for water, are being made of American Cyanamid Laminac polyester resin reinforced with a mat of Owens-Corning Fiberglas. The tanks are operating in desert transport service where sand storms cut protecting paint from a steel tank and then progressively cut rust from the bare tank until no tank is left.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN-7571

CYCLONE SEPARATORS

WRITE FOR DATA SHEET

Our standard line of separators and years of specialized engineering will prove valuable in PNEUMATIC CONVEYING MATERIALS HANDLING DUST CONTROL and many other applications

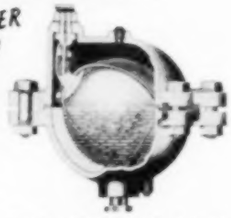
1712 N. 2ND ST. PHILA. 22, PA

QUINN BROTHERS INC.

If you write make identify as IEN-7572

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage.

IT'S SIMPLEX IT'S ACCURATE

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 50 years.

Write for free bulletin to Simplex Valve & Meter Co., Dept. 7, 6717 Upland Street, Philadelphia 42, Pa.

SIMPLEX VALVE AND METER COMPANY

If you write make identify as IEN-7573

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY

Standard 2-way entry bolted type skid built to handle loads up to 5 tons.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND BOX & LUMBER COMPANY *Materials Handling Division* 50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write make identify as IEN-7574

PLAN NOW... FOR HEALTH SAFETY

Safety is the prime requisite for your workers in plant or office. On that depends continuous production. The installation of Halsey Taylor Coolers and Fountains throughout plant and offices means an abundant supply of contamination proof cool water at all times, regardless of pressure variation and with minimum cost! Why not investigate the Halsey Taylor line?

HALSEY TAYLOR *Fountains and Coolers*

THE HALSEY W. TAYLOR CO. WARREN, OHIO

If you write maker identify as IEN - 7575

Finding the best in GAS WELDING SUPPLIES

What are your gas-welding supply requirements? Welding Rods? Fluxes for welding and brazing? Silver brazing Alloys? Carbon rods and Plates? Or Asbestos Paper?

You'll find all the types and forms you need for a complete range of gas welding in Airco's Gas Welding Supply Catalog No. 12.

Send for a free copy today. Please write us on your business letterhead for Gas Welding Supplies, Catalog 12. Address: Advertising Department, Air Reduction Sales Company, 60 East 42nd Street, New York 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND AN AIR REDUCTION PRODUCT

AIRCO

AIR REDUCTION

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

If you write maker identify as IEN - 7576

Take Your Pick of Performance

In the complete Fairbanks-Morse Pump Line you can pick the pump that best suits your ideas of performance, efficiency, capacity, head, initial and operating costs. Whatever your choice, you can be sure it will more than live up to your expectations . . . it's Fairbanks-Morse.

For complete information, call your Fairbanks-Morse pump expert or write Fairbanks, Morse & Co. 600 S. Michigan Ave. Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

PUMPS • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS

If you write maker identify as IEN - 7578

HANDLING . . Tilting table to assist in servicing heavy tools

Source: HAMILTON TOOL CO.
905 Hanover St., Hamilton, Ohio

Portelvator Tilting Truck

Load rating is 3,000 lb. for this new 24 by 96-in. tilting table. It is mounted on wheels and casters for portable application. It applies in connection with a crane to receive and tilt heavy broach holders to be serviced. The table rotates through 300 deg. on a horizontal axis and can be locked in any desired position. When it stands horizontally it is 30 in. above the floor. Two wheels support the load at the center in connection with four casters at the corners. The arrangement permits turning the table in its own length. Floor locks secure the unit.

If you write maker identify as IEN - 7579

GRINDING . . Cup type wheel, resin bonded design to wear evenly

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., New York 20, N. Y.

Named Royalite Hard-Shell

A hard shell of tough resin-bonded abrasive is built around a core of resin abrasive in the construction of this new wheel. The shell measures $\frac{1}{16}$ in. in thickness. It resists mushrooming or rounding of the wheel's cutting edge so wear occurs evenly across the wheel face. Preparation for welding, foundry work, finishing welds and machine shop work are representative applications for the new wheel.

Overall diameter tapers from 6 to 4¾ inches. Thickness is 2 inches. The wheel is available for three standard arbors.

If you write maker identify as IEN - 7580

CLEANING . . Rotary brush machine to scrub, sand, wax and polish a floor

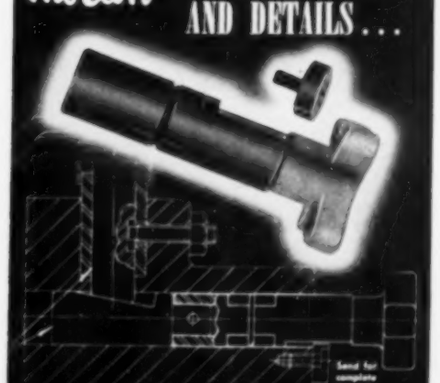
Source: CLARKE SANDING MACHINE CO.
28 E. Clay Ave., Muskegon, Mich.

Type P-11 is a new size in the company's Floor Maintainer line in which an 11-in. brush is driven at 175 rpm. by a ½-hp. 110-volt ac. motor. The machine is featured by noiseless operation and by the fact that the operator needs only to guide it over a floor surface. A switch on the handle provides start and stop control. The supporting wheels are self-retracting when the machine is in operating position. Brushes, buffers, steel-wool pads are quickly interchangeable. A rubber bumper surrounds the housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7581

Morton FIXTURE CLAMPS AND DETAILS . . .



Send for complete Catalog. Includes full size tracing templates.

Typical application of Jack Lock being used to support section of casting during machining operation. This is one of the numerous applications of this positive, vibration proof, non-distorting Jack Lock.

MORTON MACHINE WORKS
2431 WOLCOTT STREET • DETROIT 20, MICHIGAN

If you write maker identify as IEN - 7582

This Saw "Mows 'Em Down

Even With the Ground"

The LITTLE GIANT Saw cuts down trees and stumps at any angle, bulldozes logs, bores post holes, propels itself anywhere a man can walk and loads itself on a truck. ROCKFORD CLUTCHES control power transmission in this versatile unit. Let ROCKFORD clutch engineers help solve your power transmission control problems.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION
1323 Catherine Street, Rockford, Illinois, U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN - 7583

You Get
new efficiency... new economy...
With Norton New-Process Wheels

In Norton New-Process Wheels, fast, cool cutting ALUNDUM* abrasive combines with more uniform structure and built-in balance for matchless grinding performance.

You get more even wheel-wear, longer wheel-life. You grind closer and smoother, with less vibration and no chatter marks. You can take heavier cuts on expensive tool steels without drawing tempers or risking spoilage.

New-Process Wheels (made in sizes up to 14") are ideal for toolroom grinding and other jobs on high tensile materials. Ask your Norton Distributor for the 160-page "Handbook On Toolroom Grinding," or write direct for Form 833 Norton Company, Worcester 6, Mass. Distributors in all principal cities.

NORTON ABRASIVES
Making better products to make other products better

*Trade Mark Reg. U. S. Pat. Off. and Foreign Countries.

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on Rolled Forms, Stampings & Assemblies

You can have delivery and price figures as fast as you need them on your sub-contract work. We are equipped for volume production to meet your defense requirements.

Just send sketch, blueprint or work sample. No obligation.

Write or phone nearest Greene Co. representative

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G-14a

Greene of Racine
GREENE Manufacturing Company, Inc., Racine, Wis.

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which roller bearing is best for your problem?

...obviously one that is best suited to your machinery's particular requirements. You would want maximum capacity, smooth precision performance, long life, dependability with the least maintenance and of course an adequate range of sizes. McGill MULTIROL Bearings have been delivering this insurance for successful machinery for over 20 years. With today's increasing production demands it will pay you to specify MULTIROL. Write for complete information in the new McGill Catalog No. 52 today.

CF Series

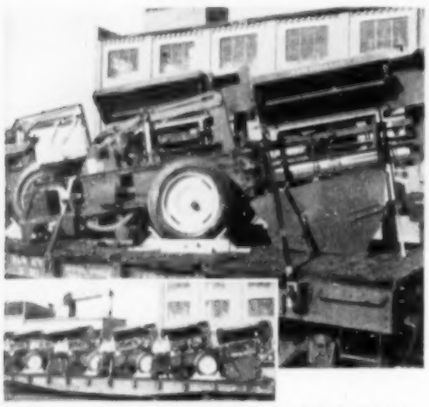
Multirol CF Series Bearings have an extra heavy outer race section that provides loads in cam actioned or guide and support roller applications on automatic machinery.

Rollers Roll More Load

Write today for the new Catalog No. 52. McGill Manufacturing Co., Inc., 101 N. Lafayette St., Valparaiso, Indiana.

McGILL® precision bearings

If you write maker identify as IEN - 7586



NEW HOLLAND MACHINE COMPANY

"trims hours and dollars from old loading schedule with **Stanley Car Banding**"

From the New Holland Machine Co., New Holland, Penn., manufacturer of farm machinery, comes another success story for Stanley Car Banding.

Mr. F. Paul Kochel, Transportation Mgr. says, "We switched from loading our hay balers in box cars to shipping them on flat cars secured with Stanley Car Banding. With this new method we saved approximately 2 man-hours in loading each baler, and in addition, saved sufficient space to permit another baler to be shipped aboard each flat car, thus increasing our savings per car." He adds, "In our four years of experience with Stanley Car Banding, it has proved very satisfactory on every application".

More and more shippers, faced with widely varying problems, have made important savings in time and labor with the help of a Stanley Representative — a specialist in Steel Strapping and Car Banding Systems. Let him help you. Just mail the coupon below. The Stanley Works, Steel Strapping Division, New Britain, Connecticut. Branch Offices or Representatives in 32 principal cities.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

Invite the Stanley Man to call

THE STANLEY WORKS, Steel Strapping Division
204 Lake Street, New Britain, Connecticut

Please ask your representative to call and explain the advantages of the Stanley Steel Strapping System to me.

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If you write maker identify as IEN - 7588

CRUSHING . . Hammer mill to reclaim fused arc welding flux

Source: ROBERT HOLMES & BROS. INC.
512-18 Junction Ave., Danville, Ill.

Ask for Bulletin 104

Spent flux gathered up following a submerged-arc welding operation is filled into the hopper of this new Model-2 crusher. The machine reduces the fused material to a size that permits its use over again in mixture with a given amount of new flux. The material feeds down through a throat to pass over a permanent magnet where ferrous particles are retained. The flux then drops into the crushing chamber where it is acted upon by hinged hammers until it will pass through a semi-circular perforated screen located interchangeably at the bottom of the crushing chamber. Material that passes through can be collected in a container positioned beneath a delivery chute.

The machine occupies a floor space measuring about 23 by 26 inches. It rates 1,500 to 2,000 lb. of reclaimed flux per hour. The company is prepared to supply perforated plates with openings measuring ⅛ to ½ in. in diameter.

If you write maker identify as IEN - 7589

CLEANING . . Vacuum attachment adds dirt tank to suction line

Source: MULTI-CLEAN PRODUCTS INC.
2281 Ford Parkway, St. Paul 1, Minn.

No chance to clog

Add-A-Tank is a new assembly of attachment parts to include a cover plate with 5 and 15-ft. lengths of metal hose, extension pipes, a flexible flue tool, a flue scraper and a wire brush. These attachments apply in the suction line to the company's vacuum cleaning equipment or to similar equipment for cleaning work that will involve collection of a large amount of dust or soot.

Solid materials gather in a standard galvanized ash can supplied by the user and so separate out of the vacuum line before it reaches the cleaning machine. The new equipment operates on either wet or dry pick-up with any make of industrial vacuum-cleaning equipment as well as with the company's own design, using suitable connections.

Identify as IEN - 7590

Hold your ears if you see the man coming with this new G-E "transistorized" megaphone. He can set it so out will come a shout that will knock you flat when he talks in a normal tone. It is done with a tiny bit of plastic, some wire, and a metallic element called germanium. Power is supplied by a battery about as big as a miniature cigarette holder.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7591

"Solved our marking problem!" say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . . "for marking boxes, cartons, packages." "Quick, clean, accurate, easy-to-use. Prints *1000* or more clear, sharp copies from one stencil . . . one inking. Just type, write, trace or draw on low-cost stencil, snap in position and print . . . like using a rubber-stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES

At Your Office or Shipping Room Supply Dealer

MULTISTAMP STENCIL DUPLICATOR

If you write maker identify as IEN - 7592

YOU OFTEN GET 3 TO 5 TIMES AS MUCH PRODUCTION PER WHEEL-DRESSING WITH ROBERTSON COOL-CUT WHEELS

Production-wise manufacturers report that Robertson Grinding Wheels are increasing output as much as five times per wheel-dressing. That's because the unique open structure of these wheels permits chip clearance, enables the grains to remove the metal without loading.

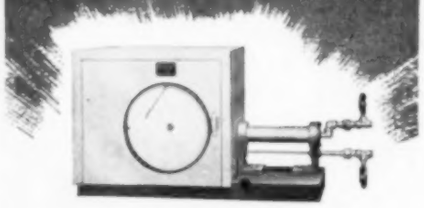
Robertson Cool-Cut Wheels for tool grinding work better, cut faster and last longer than conventional close-grained wheels. Why not try Robertson? You'll get top results, even on the toughest grinding operations.

ROBERTSON MANUFACTURING COMPANY
TRENTON 5, NEW JERSEY

Resin Bonded and Vitrified Bonded Grinding Wheels • Mounted Wheels • Segments

If you write maker identify as IEN - 7593

ARCCO ANUBIS
LIQUID GRAVITOMETER



...for PIPELINES, REFINERIES, GASOLINE PLANTS

This ruggedly built instrument of laboratory accuracy is ideal for quick checking and for continuous recording of Specific Gravity of liquids under line pressure. Changes in Specific Gravity of sample are recorded with a very minimum of time lag. Foreign liquids and gases are automatically purged from sample. No moving joints or stuffing boxes to cause friction or leakage. Temperature corrected, this precision instrument is adaptable to high pressures. Hundreds are in daily use in plants and refineries of major companies. Also available as a controlling instrument. Send for bulletin No. 111A.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

If you write maker identify as IEN - 7594

*flamefoil** finished CANVAS for PROTECTION

RESISTANT to
- FIRE
- WATER
- WEATHER
- MILDEW

Flamefoil canvas gives extra margin of safety against fire in your plant. . . . . reduces your losses.

SEND AT ONCE FOR BOOKLET
"FLAME RESISTANT FABRICS"

*Manufactured under Patents Nos. 2,044,176 and 2,299,612 . . . . . others pending.

FLAMEFOIL GUARDSMEN

PHILADELPHIA TEXTILE FINISHERS, Incorporated
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NORRISTOWN, PA.

If you write maker identify as IEN - 7595

ERTEL STAINLESS STEEL Centrifugal & Self-Priming PUMPS

with minimum of parts...

Meet requirements for handling corrosive liquids in the *Drug, Chemical and Food field.*

MODEL SCP CENTRIFUGAL — MODEL ESP SELF-PRIMING

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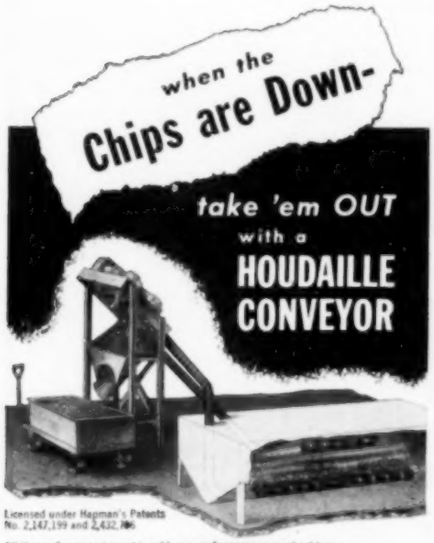
ERTEL ENGINEERING CORPORATION

KINGSTON 4, NEW YORK
Branch Office & Showroom Located in New York City

COMPLETE LINE OF *Liquid Handling Equipment*

ERTEL

If you write maker identify as IEN - 7596



Licensed under Hapman's Patents No. 2,147,199 and 2,432,186

All Honan-Crane equipment is sold on a performance guaranteed basis.

In this large motor car plant, Houdaille Enclosed-Flight Conveyor continuously removes chips from pit beneath twin banks of Bullard 12-Station Transfer Drilling Machine. Chips are deposited into portable hopper for disposal. Houdaille Conveyor is ideal for removing small material from confined area. This installation paid for itself out of savings in one year.

Automatic System Solves Difficult Chip and Sludge Removal Problems . . . Cuts Costs, Speeds Production

Houdaille Conveyor's automatic loading and continuous materials transport handles any solid or fibrous waste (chips, abrasive sludge, scale, etc.) which settles to the bottom of a tank or hopper. Many plants of all sizes, in many types of operation, have saved substantially on labor, maintenance, down-time and other production costs by installing one or more Houdaille Conveyor systems.

Check these important Houdaille advantages:

- Eliminates costly manual cleaning and handling methods
- Operates continuously or intermittently as needed without shutting down productive machinery
- Readily adaptable to almost any need, any space or traverse requirement . . . ideal for restricted areas
- Dependable, trouble-free automatic operation; requires little or no maintenance attention; quickly pays for itself out of savings.

Write for complete information and case histories. Honan-Crane Engineering Service is available.

HONAN-CRANE CORPORATION
802 Wabash Avenue, Lebanon, Indiana
subsidiary of HOUDAILLE-HERSHEY CORP.

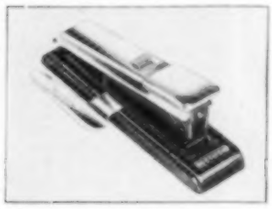
WORLD'S LEADING OIL FILTER MANUFACTURER

IN CANADA:
E. W. Playford, Ltd., Montreal 28
W. E. Mickelthwaite, Toronto 18
Cummins Galbraith, Ltd., Edmonton, Alta.

If you write maker identify as IEN - 7598

STAPLING . . Combination tool to apply staples and also remove them

Source: BOSTITCH INC.
555 Mechanic St., Westerly, R. I.



Four in one design

Type B-11 is new design in the company's line of stapling tools. It can be employed as a tacker, a stapling plier, a desk stapler and a staple remover. It will fasten as many as 22 sheets of ordinary bond paper. A window on the side shows the remaining supply of staples. A lock is operated to open the unit for quick loading. The staple-removing blade is permanently secured to the base.

If you write maker identify as IEN - 7599

SPRAYING . . Multi-jet nozzle covers spray path to 66 ft. in width

Source: SPRAYING SYSTEMS CO.
3208 Randolph St., Bellwood, Ill.

Five nozzles are assembled on the body of this new No. 5450-2TOC BoomJet nozzle unit. Three are set solidly at 120 degrees. Two can be swiveled for angle adjustment. Threaded inlet is at the top. Several sizes are available with capacity at 1 to about 21 gallons per minute. The nozzle is to mount on a truck.

If you write maker identify as IEN - 7600

SEALING . . Liquid material for ignition lines, wiring, batteries

Source: REYNOLDS INDUSTRIES INC.
4502 Euclid Ave., Cleveland 3, Ohio

Sherolite trade names a water-proof sealing material for spray application on engine wiring and ignition equipment against the entrance of moisture. The liquid dries to a hard flexible coating to cover exposed porcelain on spark plugs, brass terminals and exposed sections of wire. The liquid is now available in a pressurized container holding 12 ounces. List price is $1.35.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7601

GREATER ACCURACY FOR YOUR BATCH MEASUREMENT OF LIQUIDS

NIAGARA Electricontact METERS

Here's an efficient meter that offers simple, accurate, fast measurement of all commercial liquids — AUTOMATICALLY. A precise electri-contact unit stops flow of liquid through pipe; shuts off pump motors, provides visual or audible signals to the operator. Electric control imposes no friction load on the meter, insures greater accuracy, longer life.

Get the facts on meters to meet your requirements—today.

Please send me full information on use of Niagara Liquid Meters for:
Liquid
Temp. °F Pressure p.s.i.
Flow rate g.p.m.
Maximum Batch gals.
Company
By
Address

BUFFALO METER CO.
2979 MAIN STREET BUFFALO, N. Y.

If you write maker identify as IEN - 7602

Small Compact SERIES "K" ROPER PUMPS KEEP POWER COSTS DOWN

With capacities from 3/4 to 50 G.P.M., Roper Series "K" Pumps are adaptable to a wide range of jobs pumping clean liquids. Designed with the Roper venturi suction and discharge principle, they have high volumetric efficiency — energy loss from turbulence, cavitation, and friction is held to a minimum — power costs are reduced. Packed box or mechanical seal, with or without relief valve as desired.

3/4 TO 50 G.P.M.—PRESSURES TO 150 P.S.I.

ROPER Rotary Pumps

Send for Catalog

Detailed facts on Series "K" Models plus data on other pumps in the Roper line.

GEO. D. ROPER CORP.
307 Blackhawk Park Ave., Rockford, Illinois

If you write maker identify as IEN - 7603

A steel fabricator replaced an I-beam crane system with modern Cleveland Tramrail equipment and thereby doubled his tonnage output. This is a typical story, because regardless of size or type, most Cleveland Tramrail installations pay for themselves within a few months.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4239 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 7604

ASK FOR YOUR FREE COPY!

IT'S JAM-PACKED WITH MONEY-SAVING IDEAS

There are dozens of ways the Zip-Lift can help you cut costs with "thru-the-air" handling. The Zip-Lift is easy to install. Hang it up on hook, jib, or trolley, and plug it in. Handles loads up to one ton. Write for Bulletin H20-1. This fully illustrated bulletin suggests many ways you can save time, effort, and money in your plant. Write today.

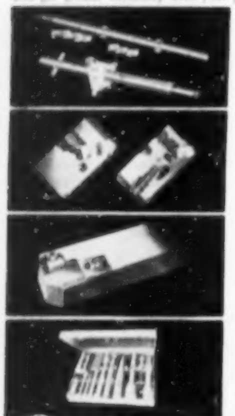
HARNISCHFEGER CORPORATION
4620 W. NATIONAL AVENUE • MILWAUKEE 46, WISCONSIN

If you write maker identify as **IEN - 7605**

INCREASE YOUR PRODUCTION ON YOUR PRESENT EQUIPMENT

with Davis complete tooling service

Davis "Complete Tooling Service" is a world-wide sales and service organization that offers you a full line of standard boring tools (capacity — any dia. from 5/8" to 50") . . . plus design and construction of special tools. . . Standardize your whole shop on one complete line of modern tools . . . count on one dependable source of supply and engineering help . . . share in the latest developments in tool design. You can increase production, lower costs and get greater flexibility with your present equipment.



◆ To meet individual needs, Davis has a wide range of plain and block type line bars. Case hardened bars for jobs with heavy loads. Also available are micrometer adjustable cutter blocks and boring heads that will bore up to a 50 in. dia.

◆ Single and two-cutter adjustable block type cutters for general purpose boring where rigidity and a wide range of cutter adjustments are needed. Boring range 5/8" to 17". Multiple cutter types are in most cases interchangeable with regular blocks. Available with two or more sets of cutters for boring, counterboring, facing.

◆ With "clamped-on" tipped carbide cutters and massive holders you can use maximum planer feeds with minimum strain upon tip. Made in either right or left hand and will accommodate different style tips.

◆ Davis stub boring tools speed up boring operations on vertical and horizontal boring machines. Available in sets with stub boring bars accurate to .0001 in. adjustment. Range from 1½ to 7 in. dia.

DAVIS BORING TOOL

Div. of Giddings & Lewis Machine Tool Company, Fond du Lac, Wis.

World's Largest Builder of Horizontal Boring, Drilling and Milling Machines • Planer-Type Milling Machines • Large Vertical Boring Mills

If you write maker identify as **IEN - 7608**

GRINDING . . Spindle attachment applies abrasive belt on portable tool

Source: CARBORUNDUM CO.
1942 Buffalo Ave., Niagara Falls, N. Y.

Belt does smooth job

A contact wheel to mount on the spindle of a portable electric or pneumatic tool, a clamping arm with an idler to apply at the position normally occupied by a wheel guard on the spindle housing and an abrasive belt make up a new attachment that has been developed jointly by the company and the Buckeye Tool Corporation. The contact wheel body and the extension arm and idler are made of aluminum. The wheel is a miniature design of the company's No. 61 unit with a rubber-toothed rim.

Tests have been made employing a Buckeye Series-C tool with a 2 by 1-in. contact wheel and a series-D tool with a 4 by 2-in. wheel. These tools operate at constant spindle speeds of 15,000 and 9,000 rpm. Initial belt sizes for the two models are 12 by 1 in. and 20 by 2 inch. The belt can be replaced and removed quickly. Operation is free from chatter and the tool can be handled without difficulty.

If you write maker identify as **IEN - 7609**

BUILDINGS . . Preformed strips to seal corrugated sheet openings

Source: FABRICATED PRODUCTS CO.
1952 Water St., West Newton, Pa.

For a tight finished joint

Fabco Closures made of colored rubber composition have been added to the preformed asphalt composition units, previously described IEN-9497-48, to seal the openings at the ends of corrugated roofing and siding sheets. They also provide a flat surface on which to assemble plain translucent or transparent plastic sheets on corrugated surfaces. The new rubber construction is particularly suited for use with formed plastic laminate sheets such as Corrulux, Alsynite, Durolux, Resolite, Fibrelux.

Strips available from stock measure 28 in. in length, 1 to 3 in. in width and are 2½ in. and 2.67-in. in corrugaiton layout. Other sizes, between 1¼ and 4.2-in corrugation, can be made to specification.

Identify as **IEN - 7610**

For a nickel in a slot a plant worker can secure a pocket-pack of Kleenex tissues from a new Vend-Rite dispenser. It measures about 12 by 6 by 30 inches. It holds a gross of tissues. It lists at $15. Perhaps a half dozen, or more, would serve well in your plant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7612**

REACH HIGH PLACES SAFELY

A Ballymore Safety Step Ladder provides safe, sure footing in high places wherever you need it, prevents accidents and fear of accident.

Readily portable on ball bearing casters, but can't roll or kick out when supporting a person . . . weight automatically retracts casters, gives firm 4-point grip by rubber-tipped legs.

All steel construction. Three to eight steps with, one to three steps without, hand rails.

➡ **WRITE TODAY FOR COMPLETE CATALOG**

BALLYMORE COMPANY
WAYNE 4, PA.

If you write maker identify as **IEN - 7606**

Do you need this CAPACITY TO PRODUCE FINISHED WIRE LEADS

- measured and cut in 2½ to 45-ft. lengths?
- insulation stripped one or both ends to 8½ in.?
- up to 1800 pieces per hour in 10-ft. lengths?

Completed Automatically on Artos Model CS-10

Now you can get high production of insulated wire leads . . . accurately measured, cut in lengths up to 45 ft., and stripped at one or both ends. Leads are finished complete and collected in one fast, automatic cycle.

This Artos machine will handle wire, cord and cable up to No. 10 stranded or No. 12 solid. Consistently uniform results are obtained without cutting strands or nicking solid wire. Insulation may be stripped from 2 in. up to 8½ in. at one end and 6½ in. at the other. You can also slit parallel cord or remove the outer jacket on SJ appliance cords.

Inexperienced help can handle an Artos without trouble. Setups are quickly changed for different cut lengths and stripped lengths.

Write for this Free Bulletin
Get the complete story—write now for Bulletin 40 on the Artos Model CS-10.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as **IEN - 7613**

FILL-IN
NAME-PLATES
QUICKLY *with—*

THIS IS ONLY ONE OF A FULL LINE OF NAME-PLATE STAMPING MACHINES MADE EXCLUSIVELY BY

ACROMARK Company
7 MORRELL ST., ELIZABETH 4, N. J.

If you write maker identify as **IEN - 7607**

Try the MODERN SAFETY DRILL TABLE

Under our FREE TRIAL OFFER

For Faster, SAFER Work in your Maintenance Department

Combines a drill table, a vise, a set of parallels and V block. No more lost ringers from hand held jobs that slip. No more 30 minute set-ups for a 1 minute drilling operation. Made in 6 sizes from 8" to 28" dia. We guarantee each Safety Drill Table will save its cost on labor alone in 6 months, to say nothing of plant down time when vital maintenance is delayed even a few minutes.

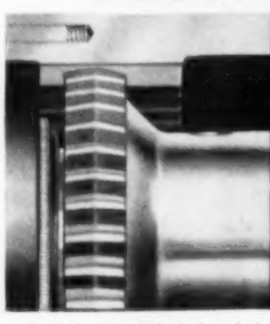
Write for Free Folder

Shows many typical set-ups, and use on radial drills. Complete specification on all models. Covers MONEY BACK GUARANTEE and 30 DAY FREE TRIAL OFFER.

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as **IEN - 7611**

AJAX DIHEDRAL COUPLINGS



most MISALIGNMENT CAPACITY

least BACKLASH

all GEARS HARDENED TO 50 TO 55 ROCKWELL C

Exclusive Ajax Dihedral tooth shape provides for maximum misalignment with tooth clearance (backlash) kept to oil film requirements. Positive oil seals keep lubrication in and dirt out. Write for catalog.

AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK

If you write maker identify as **IEN - 7614**

NEW MAGNA BIT HOLDER

A REVOLUTIONARY, LABOR SAVING TOOL. CUTS SCREW DRIVING COSTS 3 NEW WAYS

Hand starting or pre-positioning screws in assembly operations *is no longer necessary*; a high energy *permanent* magnet in bit chuck holds the bit and energizes it with 10 times the "pull" to hold the screw *firmly* on bit. Labor costs are cut.

Reduces bit costs through the use of super hard, low-cost interchangeable insert bits.

Reduces bit wear and replacement since the energized bit seats itself positively in the screw slot or recess.

Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.

Permanently Magnetic Magna-Tip Hand Screw Drivers . . . bits for all types and sizes of screws
and Magna-Tip Hex Drivers for hex head screws

U. S. Patent No. 2,550,775
Write for folder 60-E, information and prices.

MAGNA DRIVER CORP.
779 Washington St. Buffalo 3, N. Y.

If you write maker identify as IEN-7615

it's paper

. . . BUT IT MUST BE WASHED OR DRY CLEANED

To be sure your clothing gets back to you, dry cleaners and laundries usually clip on a little tag made of special Riegel paper. This paper retains its high wet strength when tossed around in cleaning fluid or hot soap suds . . . the wire clip won't tear out, nor will the customer's identification number become blurred.

It's another interesting example of Riegel's ability to make paper for almost any need. We now produce more than 600 grades, and no matter what your requirements may be . . . we should be able to meet them quickly, accurately and economically. If we can't, we will be glad to tell you who can. Write us now for more information.

RIEGEL PAPER CORPORATION
P. O. Box 170 · Grand Central Station · New York 17, N. Y.

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- ☐ Deburring
- ☐ Surface finishing, lubrication control
- ☐ Removing heat treat scale
- ☐ Preparing surfaces for electroplating
- ☐ Removing and blending grinding lines
- ☐ Finishing threaded sections for fit
- ☐ Improving die manufacturing and maintenance
- ☐ Improving cutting tool life and appearance
- ☐ General maintenance cleaning

The amazing versatility of Hydro-Finish, Pangborn's modified form of impact blasting using an abrasive suspended in liquid, will solve these and other problems for you! By varying abrasive size and hardness, air pressure, distance from work, and ratio of liquid to abrasive, almost any type of precision finishing can be accomplished faster and better!

For example, with Hydro-Finish on your production line, surfaces hold electroplating better . . . paints, rubber and plastics are bonded better because Hydro-Finish forms a "tooth" on your work. Threaded pieces turn more easily. Dies are cleaned better, surfaces are improved, production is speeded, and tools last longer.

Get the facts! Write today for Bulletin 1400A and learn how Hydro-Finish can help you! Address: PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn

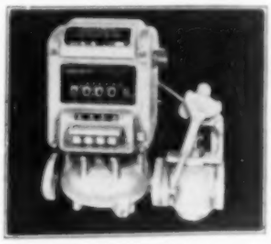
✓ Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

BLAST CLEANS CHEAPER
with the right equipment for every job

If you write maker identify as IEN-7618

METER . . Predetermines delivery of non-corrosive liquids and solutions

Source: NEPTUNE METER CO.
50 W. 50th St., Room 1922, New York 20, N. Y.



Details in Bulletin 566-7

New combination of the company's Model-432 Auto-Stop register, previously described IEN-7869-49, and its Type-S disc meters with a quick closing valve make up a new assembly for predetermined flow control. The meter is set by operating push-buttons on the register until the desired delivery quantity shows on numeral wheels above the buttons. A reset handle is then turned to clear the register back to zero and the valve is opened. The meter closes the valve when the predetermined quantity has been delivered.

Large numerals on the face of the meter move with the flow to provide a visual check. A small shuttered totalizer on the face of the register accumulates totals from which inventory figures can be recorded daily, weekly or monthly. Flow can be stopped at any time by pressing an emergency button. This action does not affect the meter reading or the Auto-Stop setting so delivery can be continued to its conclusion by reopening the valve. The register also can be reset at this point for a new quantity.

Sizes are 1, 1½ and 2 in. with flow capacity from 5 to 100 gpm. depending on size of the meter, liquid to be handled and maximum temperature. Liquids that can be handled include cold or hot water, syrups, oils, soap solutions, chemical solutions, and industrial liquids that are not corrosive to bronze.

If you write maker identify as IEN-7619

ENGRAVING . . Master templates, brass or cold rolled steel to order

Source: H. P. PREIS ENGRAVING MACHINE CO.
145 Industrial Branch, Hillside, N. J.

You specify design and reduction ratio

A new service has been established by the company through which it is prepared to supply specified master templates made of case-hardened cold-rolled steel or tempered engraver's brass for application on a standard engraving machine. The template is normally made several sizes larger than the finished work so a number of work sizes can be produced by adjustment in the engraving machine. Standard design employs a V-shape cut to the required depth in the template but special groove shapes can be specified for a given stylus or tracer.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7620

The Portable MORSE ROTATOR

THE NEWEST ADDITION TO 25 YEARS OF SUCCESSFUL MANUFACTURING EXPERIENCE

MODEL 500

SAVES TIME! SAVES LABOR!
SAFELY ROTATES UP TO 500 LBS. AT 10, 20 OR 40 RPM

A powerful, compact motorized unit that will cut costs of mixing, tumbling, cleaning, etc. Scientifically engineered for smooth, safe revolving. Can be loaded by ONE MAN and is easily moved. The power drive has a ¼" dia. shaft and is equipped with self-aligning bearings. Four 4" dia. Neoprene drive wheels adjustable to take from 1 to 55 gal. cylindrical containers. Wt. before crating 137 lbs. Furnished with motor and gear reduction unit. *Write For Complete Information.*

MORSE MANUFACTURING CO. INC.
123 Dickerson Street · Syracuse 2, N. Y.

If you write maker identify as IEN-7621

BOSS®

THE BEST KNOWN NAME IN WORK GLOVES

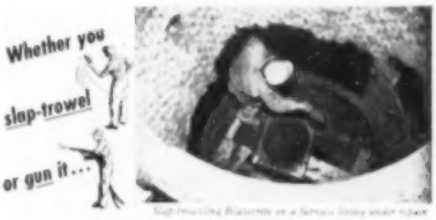
There's a perfect Boss Glove for *every* job

WHITE CANTON FLANNEL GLOVES
DOUBLE PALM GLOVES
HOT MILL GLOVES & MITTENS
LEATHER PALM GLOVES
JERSEY GLOVES & MITTENS
ALL-LEATHER GLOVES
ALL-LEATHER 6047 — Unlined horsehide all leather glove . . Driver's slip-on style.

ASK YOUR DISTRIBUTOR or send for free copy of complete catalog and new "WORK GLOVE SELECTOR." The quick and easy way to find exactly the right glove for every job. Also see "Thomas Register," 1952 Edition.

THE BOSS MANUFACTURING CO., DEPT. IE-7, KEWANEE, ILL.

If you write maker identify as IEN-7622



Slap-trowelling Blazecrete on a furnace lining under repair

You can speed refractory repairs with J-M BLAZECRETE

TO QUICKLY and economically build new refractory linings or repair old ones, just mix Blazecrete* with water . . . then gun it on or slap-trowel it on. There's no *laborious ramming or tamping.*

Blazecrete is a hydraulic setting refractory that is furnished as a dry mix, and can be stored indefinitely. To meet the requirements for various operating temperatures, Johns-Manville developed *three types:*

3X BLAZECRETE—For temperatures through 3000F. Unusually effective for heavy patching, especially where brickwork is spalled or deeply eroded. Excellent for building and repairing forge furnace linings . . . and lining ladles in ferrous and non-ferrous foundries.

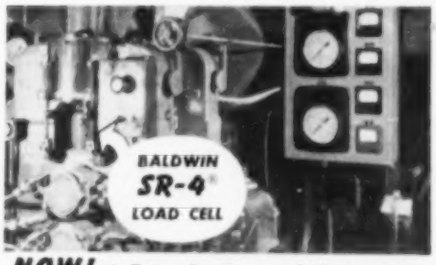
STANDARD BLAZECRETE—For temperatures through 2400F. For building new and repairing old refractory linings. Makes repair work easier and less costly. Used by boiler manufacturers to replace fire clay tile in wall construction. Does not require pre-firing.

L. W. BLAZECRETE—For temperatures through 2000F. An *insulating* refractory . . . light in weight, low in thermal conductivity. For building new linings and repairing old. Adaptable for other applications.

All Blazecrete products harden on air curing, can then be fired or left standing indefinitely. Write for Brochure BC-28A, Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto, Ont.

JM Johns-Manville BLAZECRETE
*Reg. U.S. Pat. Off. REFRACTORY LININGS

If you write maker identify as IEN-7623



NOW! Roll Loads Measured Electronically

Roll loads in a cold rolling mill making steel strip are now measured continuously and accurately by Baldwin SR-4 Load Cells mounted between leading screw and top bearing block. As loads vary, strains are translated into pounds and indicated on dials in front of the operator who can make adjustments while the mill is running. Rolls can be removed without disturbing weighing unit.

Extremely versatile, rugged, easy to install, Baldwin Load Cells are the answer to many varied applications. Accurate to ±¼% of full range in either direction at any point from 0% to 100% capacity, cells are hermetically sealed, impervious to corrosion, humidity, temperature changes. Since external connections are entirely electrical, indicators and recorders may be located at remote locations. Freedom from moving parts insures long life. Available in units with maximum capacity ranging from 500 to 200,000 lbs. Write . . . *today!*

BALDWIN-LIMA-HAMILTON
Testing Headquarters — Philadelphia 42, Pa.
In Canada: Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as IEN - 7624

QUICKLY BEND PIPE OR CONDUIT EXACTLY AS YOU NEED IT!

Make tailor-made bends *right on the job* with a Greenlee Hydraulic Pipe Bender. One-man operated . . . in fast, flow-smooth produces smooth, accurate bends in pipe up to 2", rigid and thin-wall conduit, tubing. Compact, easy to set up and operate. Great time-saver for making piping and electrical installations either on machines being produced or for your plant maintenance and construction.

GREENLEE

WRITE FOR FACTS: get complete information on this and other GREENLEE time-saving tools. Greenlee Tool Co., 1867 Herbert Avenue, Rockford, Illinois.

If you write maker identify as IEN - 7625

LIKE most production-wise foremen, Pop is a bug on tools. He knows that Nicholson X F (Extra Fine) Swiss Pattern Files, for example, are the finest finishing files you can buy. And heaven help the man who uses 'em on the wrong jobs!

Nicholson Swiss Pattern Files are widely used for removing burs left from previous machining operations, rounding out slots, smoothing small parts, and final finishing on all sorts of delicate and intricate pieces. They come in seven degrees of coarseness and scores of shapes and sizes. Available through your industrial distributor.

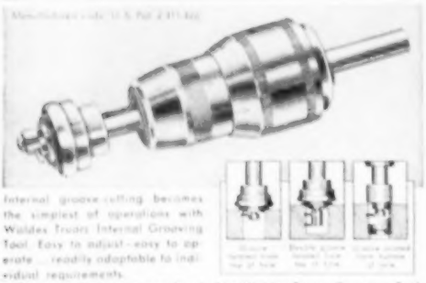
Send for the Nicholson booklets, "Ten Special File Types" and "File Filosophy." They're FREE.

NICHOLSON FILE CO., 33 ACORN ST., PROVIDENCE 1, R. I.
(In Canada, Port Hope, Ont.)

NICHOLSON X F
. . . a file for every purpose

If you write maker identify as IEN - 7626

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves
in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!



Internal groove cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine . . . assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features.

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-19

We suggest that you remind your sales department at this time to check your company's product listings in Thomas' Register of Manufacturers. Now is the time to make the check, just prior to start of assembly and publishing of the new volumes for 1953.

There is no charge for the editorial listings. The Register publishes them to show all of the sources for all products made in the United States. Inclusion of your company name, address and rating under the proper product headings, in the A to Z section alphabetically and under your trade names will assure you your share of purchase inquiries in 1953 and in the years to come.

The Register is not just another place to list your products for sale. It is the one place in which more buying inquiries originate than in all other source references combined.

TAX TAKE — IEN S-20

Stanley Works, New Britain, Conn., totaled up its 1951 earnings and checked them off against last year's 365 days. The result? Taxes took 257 days. Dividends were allowed 53 days. The final 55, supplemented by a $3,400,000 dent in working capital, were required to meet the needs of plant expansion and inventories. And of course the tax collector claimed a sizable piece of each stockholder's dividend.

ENGINEERS ARE NEEDED — IEN S-21

An advertising campaign is starting that will urge qualified high school students to consider engineering as a career. The present engineer shortage in industry totals about 60,000. Industry needs a minimum of 30,000 new engineers a year for normal replacement and growth. Annual requirement is 40,000 to fill the needs of industry and government in a national emergency. Against this it is expected that engineer graduates will total 28,000 in 1952, 19,000 in 1953, 12,000 to 17,000 in 1954.

REEL SHORTAGE — IEN S-22

The wire and cable makers are asking your help to overcome a present critical shortage of cable reels and wire spools. Dig up those "lost" in your plant. Start them rolling back.

U. S. SAVINGS BONDS — IEN S-23

Top Management:
YOUR BOOST
IS NEEDED MOST

If you write maker identify as IEN - 7627

Carryers
MID-WEST TOTE-BIN BASKETS
are built to meet YOUR requirements

. . . FOR PARTS NOT REQUIRING INDIVIDUAL SUSPENSION

Practical design, based on extensive experience, rugged construction, and the Mid-West patented* integral handle-runner nesting feature make these tough, clean, efficient tote-bin baskets a sound investment for industry. They stack easily, locked sideways and endways . . . stand up under hard usage . . . and are made of wire or expanded metal to fit your specific needs.
*U. S. Patent No. 2,564,795.

CIRCULAR ON REQUEST

PIONEERS SINCE 1927 . . . IN WIRE CARRIERS AND MISC. TOTE BIN BASKETS

"If it's made of wire, we can make it"

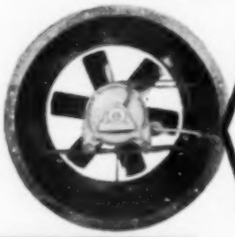
SPECIALISTS IN MEANS OF SUSPENDING MACHINED PARTS

MID-WEST WIRE PRODUCTS CO., INC.
JERRY GERALDS, President
PENKELL AT LINWOOD • DETROIT 27, MICH.

If you write maker identify as IEN - 7628

PLACE YOUR VENTILATING PROBLEM IN OUR HANDS

TUBEAXIAL FANS by ROBINSON



Will Solve Your Ventilating Problem!

ROBINSON VENTILATING COMPANY
ZELIENOPLE, PENNA.

Efficiently handles large volumes of air at moderate pressures...unusually well adapted for exhausting smoke, fumes, light dust, etc. from hoods or sandblasting booths and spray booths.
End flanges provide convenient installation in duct systems...direct drive...or V-belt...your operation conditions dictate the type and size.

ASK FOR BULLETIN NO. 6001

MAKERS OF FANS AND VENTILATING EQUIPMENT FOR FIFTY YEARS

If you write maker identify as IEN - 7629

Aetna

THRUST BEARINGS
for every load, speed and duty

Standard types and sizes for every conventional application involving thrust loads • Specials to 38" O.D., 250 ton capacity • Facilities for microscopy, physical testing and metallurgical laboratory services • 36 years of specialized, high precision manufacturing and engineering experience in the field of ball thrust bearings. Write for catalog.

AETNA BALL AND ROLLER BEARING CO.
4600 Schubert Ave.
Chicago 39

EQUIPPED FOR SIZES FROM 3/8" I.D. TO 38" O.D.

If you write maker identify as IEN - 7630

Compact Power for Low Speeds

NEWEST OF ALL MOTORS

RIGHT ANGLED PYRAMIDAL BASE CANTILEVER DESIGN
20 TO 155 RPM
¼ TO 3 H.P.

New line of right-angled, worm-geared low speed motors...Type GW Syncrogears. Cantilever design protects gear alignment by preventing distortion of gear and motor housing. Rigid one-piece pyramidal base absorbs mounting stresses. "Spread-eagle" feet insure utmost stability. Parabolic contours lend graceful appearance. Compact "short hitch", of special appeal to Design Engineers.

TYPE GW

U.S. SYNCROGEAR

Get this FREE BULLETIN
Just off the press—profusely illustrated. Bulletin presents complete details with multi-color illustrations. Various types and sizes. Full of facts how to apply right-angle power for longer life.

U. S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Calif. Box 2058 or Milford, Conn.

If you write maker identify as IEN - 7631

BILLMYRE BLOWERS & EXHAUSTERS

HOW MUCH AIR OR GAS?

Get the right amount of clean, dry air or gas with the right BILLMYRE Blower and Exhauster.

- **TAILOR-MADE PRESSURE**...from ½ to 7-lbs., to suit your air or gas temperature and density ranges.
- **CONSTANT PRESSURE**... motor drive and self-governing design eliminate separate controls, guarantee even pressure.
- **NO CONTAMINATION**...no internal lubrication necessary, air is always kept clean and dry.
- **LOW MAINTENANCE COST**...motor-driven shaft-impeller assembly is the only moving part, eliminates constant checking.
- **VERSATILITY**... performance-proved for agitating, aerating, combustion, cooling, ventilating, gas and acid manufacturing, vacuum cleaning and many other applications.

Fifty years of air-moving experience lie behind Lamson BILLMYRE products. Let our engineering staff help you solve your air or gas problems.

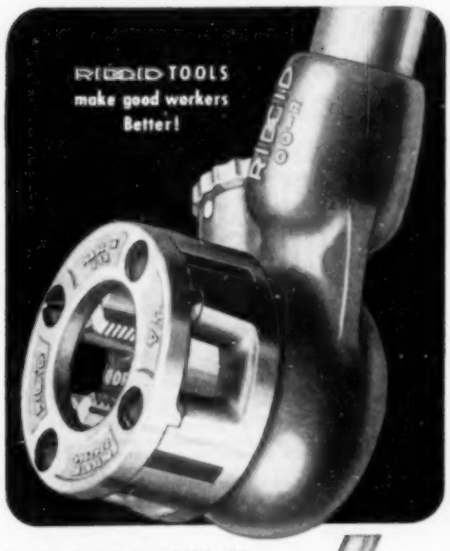
Write for information—Bulletin B-5. BILLMYRE Blower Division. Lamson Corporation, 450 Lamson St., Syracuse 1, N. Y. Offices in principal cities. Consult your Redbook.

LAMSON

Single or multi-stage . . . ½ to 7-lbs. pressure . . . ½ to 500 h.p.

If you write maker identify as IEN - 7632

WHY SKILLED WORKMEN Prefer RIDGID Small Ratchet Threaders



Drop head sets to thread ⅛" to 2"

Extra Fast Easy Pipe Threading

RIDGID Bolt Dies 00R-B ¼" to 1", National Coarse and Fine Thread

- ★ Heads snap into ratchet ring from either side, won't fall out.
- ★ Precision-cut alloy dies reverse for close-to-wall threads—no special dies needed.
- ★ 00R & 0R, ⅛" to 1"; 111R and 11R, ⅛" to 1¼"; 12R, ⅛" to 2". Conduit dies available.
- ★ Buy at your Supply House.

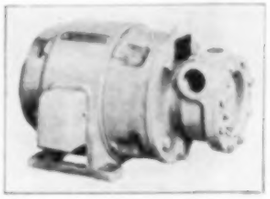
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID Work-Saver Pipe Tools

If you write maker identify as IEN - 7634

PUMP . . Turbine vane design for hot, cold, clear, vaporous liquids

Source: PEERLESS PUMP DIVISION
West Ave. 26 & Humboldt, Los Angeles 31, Calif.



Details in Bulletin B-2205

Type TVE, shown in the illustration, and Type TVR, in which the pump and motor are connected on a common base by means of a flexible coupling, are new designs in the company's line of turbine vane pumps. Pumping capacity ranges to 56 gpm. at 1750 rpm. or to 58 gpm. at 3,500 rpm. Heads are to 300 and 800 ft. at the two speeds. Motor rating is to 7½ and 20 hp. Both designs are available in self-priming arrangement with a suction trap on the horizontal inlet and an air-separating priming chamber on the vertical outlet.

Liquid enters the pump to pass through suction ports from where it is picked up by a single multi-vaned impeller. These vanes impart centrifugal action to the liquid to throw it into a channel from which it is deflected into succeeding vanes of the impeller. The resulting generative action continues around the channel, continually building up pressure, until the liquid reaches a stop which deflects it into the discharge outlet.

Heads and capacity in the various sizes depend upon the diameter of the impeller, the width and depth of the vanes, the area of the channel and the clearances between the impeller and the side plates and the speed of impeller rotation.

Applications are in water supply, boiler feed and condensate return, liquid boosting, circulating, filtering operations.

If you write maker identify as IEN - 7635

HEATING . . Oil fired unit delivers warm air at floor, also cools

Source: FACEOL HEAT MACHINE CO.
5723-27 Mount Elliott Ave., Detroit 11, Mich.

Self-contained assembly

Model PW-189 is a new size in the company's line of portable oil-fired unit heaters in which the burner fires into a cylindrical combustion and heat-transfer chamber through which air is driven by a motor-operated centrifugal blower located on the heater housing. The blower draws air in at the top, delivers it downward through the exchange chamber and out at the floor line. Heat rating for the new unit is 189,000 btu. Air handling capacity is 1,500 cfm.

The unit can be converted for ventilating and cooling during summer months by repositioning the blower and its motor on the housing so the blower will deliver horizontally rather than down into the heat-exchange chamber. Overall dimensions are 21 by 33 by 58 inches. Weight is 235 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7636

MEAD IMPACT MILLS SINCE 1877

PULVERIZE GRINDABLE AND UNGRINDABLE MATERIALS

FAST CONTINUOUS PRODUCTION
QUIET
LOW MAINTENANCE
5 VERSATILE MODELS
WIDE RANGE of MATERIAL & PARTICLE SIZES
HIGH SPEED IMPACT

WET or DRY SAMPLES of YOUR MATERIAL TEST RUN at no charge.

PATENT PENDING

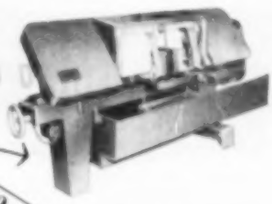
COMPLETE ENGINEERING AND INSTALLATION AVAILABLE

Write for literature...

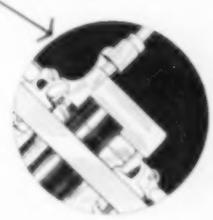
MEAD MILL COMPANY
14620 EAST SEVEN MILE ROAD
DETROIT 5, MICHIGAN • DREXEL 1-0200

If you write maker identify as IEN - 7637

you can see the CUTTING ACTION



Kalamazoo METAL CUTTING BAND SAW



Yes . . . you can look directly down into the cut as it's being made, giving you instant warning of any need for adjustment. And blade wear and dullness can be quickly detected, too. Result? Faster, cleaner precision cutting, longer blade life.

Investigate the many other exclusive Kalamazoo Band Saw features that give you lowest cost metal cutting. Three sizes, all available with coolant equipment and casters.

MACHINE TOOL DIVISION

Kalamazoo TANK and SILO CO.
711 HARRISON ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 7638

FOR PRECISION Carbide Finishing

ELGIN DIAMOND IN DYMO-C

...Designed for Carbides!

Where precision really counts, finishers specify ELGIN Diamond because they can be sure of:

- *consistant accuracy—uniform cutting action*
- *flawless finishes every time, in less time*

Actual field tests prove this new diamond abrasive up to 20% faster for finishing carbides.

Send for the DYMO-C bulletin today!

ABRASIVES DIVISION, Dept. H
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

If you write maker identify as IEN - 7639

KOHLER ENGINES

4-Cycle Air-Cooled

Kohler Engines provide reliable power for a wide range of uses. Compact, quick-starting. Engineered and built to the high standards that have won world-wide acceptance for Kohler Electric Plants in construction and other industries. The Kohler mark has been identified with quality products for over three-quarters of a century. Write for information on distributor's sales franchise.

Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

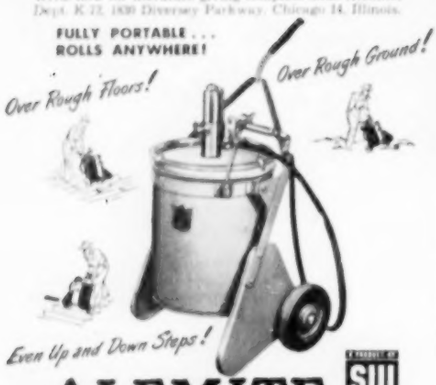
If you write maker identify as IEN - 7640

BRINGS POWER LUBRICATION ANYWHERE IN THE PLANT!

New ALEMITE "711-A" HIGH PRESSURE LUBRICATOR

Attach it to an air line and you're set to tackle the toughest lubrication jobs anywhere! Pumps direct from 25, 35 or 50 lb. pails. Power head guaranteed for over 2 years. Write now for literature giving complete data. Alemite, Dept. K 77, 1830 Diversey Parkway, Chicago 14, Illinois.

FULLY PORTABLE . . . ROLLS ANYWHERE!



ALEMITE

A PRODUCT OF SW INDUSTRIES

If you write maker identify as IEN - 7641

HOW TO GET THE MOST FOR YOUR MONEY!

JUST MECHANIZE your materials handling operations by using CLARK EQUIPMENT. It's as simple as that.

● That's what they all say? Perhaps. But CLARK backs up *its* claim with facts and unmatched performance.

On the questions of . . .

- √ Quality, Longevity
- √ Savings Achieved
- √ Customer Satisfaction
- √ Number of Trucks in Use
- √ Efficiency and Performance
- √ Economy of Operation and Maintenance
- √ Factory and On-The-Ground Service

. . . there is at hand—and available to you—overwhelming evidence that CLARK Serves You Right!

The whys and wherefores are available to you in two new media—the "SERVES YOU RIGHT" edition of our Material Handling News, and our new movie on the use of fork-lift trucks and industrial towing tractors in Plant Maintenance Work.

They'll tell you and show you how CLARK enables you to get the MOST for your money. Just fill out the coupon, attach to your business letterhead and place in your "out-going" mail basket.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 48, MICHIGAN

Please send: ☐ Material Handling News ☐ Movie "Serves You Right" ☐ Have Representative Call.

Name_____

Firm Name_____

Address_____

City_____ Zone____ State____

CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

If you write maker identify as IEN - 7643

RHEOSTAT . . Circular, wire wound, to 1,000 watts, available from stock

Source: OHMITE MFG. CO.
4823 Flournoy St., Chicago 44, Ill.

25 to 1,000 watts in stock

Four new models of which two are shown in the illustration have been added to the company's stock line of circular wire wound resistors. The new models include one rated to 75 watts, available in a range between 0.5 and 10,000 ohms, and three others rated at 225, 750 and 1,000 watts with resistance rating in a range between 1 and 2,500 ohms.

Ceramic-metal construction is standard. Ceramic parts insulate the shaft and mounting. The resistance winding is permanently locked in place by vitreous enamel which bonds the core and base together in one integral unit. Each resistance turn is contacted by a gliding metal-graphite brush mounted on a tempered steel contact arm that provides spring action for uniform contact pressure.

If you write maker identify as IEN - 7644

SWITCH . . Pressure operated for signaling and control circuits

Source: HYDRO-AIRE INC.
3002 Winona Ave., Burbank, Calif.

0 to 1,500 pounds

Current rating is 1 amp. on 28-volt dc. at 50,000 ft. altitude for this new bourdon type pressure switch. It has been designed for use in fluid lines, particularly in aircraft, to operate a warning or control circuit when fluid pressure varies beyond predetermined limits. The switch and its bourdon tube are assembled in a cylindrical metal housing with an adjusting screw on the cover. Electrical connections are located in a standard fitting connector, also on the cover.

Identify as IEN - 7645

Pure water, equivalent of the distilled product, comes out when you squeeze a polyethylene flexible bottle containing tap water through a resin filter that applies on the bottle like a cork. The new combination is known as Deeminac. It is available in three bottle sizes measuring 6, 8 and 16 oz. with corresponding filters rating 2, 3 and 4 ounce. List price is $1.75 to $3.

Smallest unit will produce 20 gal. of water with 1 to 10 parts of impurities per million depending upon local water hardness. Replace filters 18¢ at two for $2.50 to $4.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7646

THINKING OF STAINLESS?

THINK OF ALLMETAL FOR THE FINEST IN STAINLESS STEEL FASTENERS

FOR QUALITY AND DELIVERY

Complete facilities under one roof assures controlled quality and immediate delivery. Standard and "AN" specs. Specials to order

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

Write for Catalog K

MANUFACTURERS SINCE 1929

ALLMETAL SCREW PRODUCTS COMPANY, INC.

32 GREENE STREET NEW YORK 13, N. Y.

If you write maker identify as IEN - 7647

ROUGH AND TOUGH FOR LONG SERVICE LIFE

NEW SURETY TRIPL-PALM GLOVES

"TRIPL-PALM CONSTRUCTION" Where Punishment is Roughest

These new rough and tough Surety TRIPL-PALM GLOVES have an extremely heavy synthetic rubber coating on the palm where the greatest resistance to wear and abrasion is needed most—yet, they are soft and pliable for hand comfort. On any job where there is extreme abrasive action—TRIPL-PALM GLOVES will outwear, by many times, the usual coated glove.

All styles available from your jobber or write today.

NO SEAM HERE ● WING THUMB CONSTRUCTION MULTIPLIES GLOVE LIFE

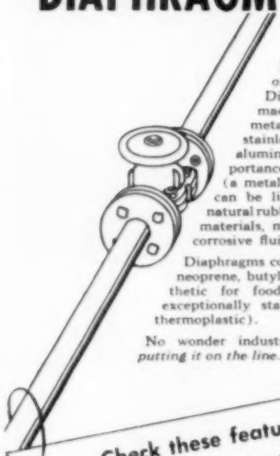
THE SURETY RUBBER CO.
DEPT. I, CARROLLTON, OHIO

If you write maker identify as IEN - 7648

PUTTING IT ON THE LINE...

in Industry after Industry!

the GRINNELL-SAUNDERS DIAPHRAGM VALVE



Here's why . . . bodies of Grinnell-Saunders Diaphragm Valves are made in a variety of metals — including iron, stainless steel, bronze and aluminum. But of more importance . . . a body of cast iron (a metal not in short supply) can be lined with glass, lead, natural rubber, neoprene and other materials, many of which handle corrosive fluids *better* than metal.

Diaphragms come in natural rubber, neoprene, butyl, hycar, a special synthetic for foods, and KEL-F (an exceptionally stable, chemically inert thermoplastic).

No wonder industry after industry is *putting it on the line.*

Check these features . . .

- Diaphragm absolutely isolates working parts from the fluid.
- Diaphragm lifts high for streamline flow in either direction.
- Diaphragm presses tight for positive closure.
- Body, lining and diaphragm materials to suit service.
- Simple maintenance — diaphragm easily replaced.

GRINNELL

WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Executive Offices, Providence, Rhode Island

Sales Offices and Warehouses in Principal Cities

If you write maker identify as IEN - 7650

YOU SHOULD KNOW... THESE IMPORTANT FEATURES OF...

PITCHLIGN

Trade Mark

Roller Bearings

1 Roller Alignment maintained by a full length cage—acting at the roller pitch circle.

2 Roller Guidance applied at the extreme length where least amount of force is required to correct skewing.

3 Cage Alignment is attained by support of the broad flanges of the outer race around the entire periphery.

4 Axial Roller Movement Restricted by the integral race flanges.

GET THE FACTS • WRITE for Bulletin SF-1066

RBC

ROLLER BEARING COMPANY OF AMERICA
TRENTON, N. J.

If you write maker identify as IEN - 7651

SAVE 25%

ON FANS AND BLOWERS!

WRITE FOR CATALOG AND FIND OUT ABOUT THIS BIG SAVING

STANDARD ELECTRIC
MANUFACTURING CO., INC.

WEST BERLIN 12, NEW JERSEY

If you write maker identify as IEN - 7652

From shop hoist to truck hoist... in seconds!

NEW... BOOM EXTENSION ADDS 25% LOAD TRAVEL

Unit Hoist showing boom extension... truck wall mounted.

UNIT "Utility" HOIST gives greater load travel plus three lifting points with capacities ranging from 1000 to 2000 lbs.

Hydraulically operated for shop, truck or machine, the Unit Hoist makes quick work of special handling operations. Setting pipe and water hydrants, working in manholes, reaching over obstructions are easy with the new 12' Boom Extension and optional Sheave Attachment.

REDUCE material handling time. Unit gives you perfect load control plus portability. Portable floor frame permits moving to any job in the shop. Hoist when transferred to any truck equipped with well swings 360° freely and locks in traveling position. *Write for Hoist Bulletin U-2.*

PIN LOCKS HOIST IN SAFE WORKING POSITION

THE BEST WHEN HANDLING:
Drums, Motors, Boxes & Crates, Transmissions, Pipe, Tires, Farm Machinery, Fixtures, Hydrants

Floor Frame Model

UNIT
Manufacturers of hydraulic cylinders for original equipment

UNIT MANUFACTURING CO.
1229 HARMON PLACE • MINNEAPOLIS 3, MINN.

If you write maker identify as IEN - 7653

DRILLING . . Portable pneumatic tool mounts chuck at 90 deg. with spindle

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.

List is $115

Model PD-A-308 is a new air-operated angle-head drill equipped with a ½-in. chuck. It has been designed to drill holes in locations normally difficult to get at. It operates free at 950 rpm. on 90-lb. air pressure.

Two styles mount a lever or button-type throttle valve. Either one weighs a little over 5 lb. and measures about 13 in. in overall length. Lubrication is from a built-in reservoir. Standard equipment includes a Jacobs geared chuck and key, a supply of lubricant, a hydraulic fitting and an 8-ft. length of ¼-in. air hose and fittings.

If you write maker identify as IEN - 7654

INSULATING . . Plastic tape for electrical and mechanical uses

Source: OKONITE CO.
30 Canal St., Passaic, N. J.

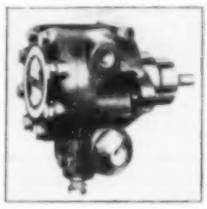
Sample roll upon request

Panther Plastic is a new stretchable adhesive plastic tape measuring 7 mils in thickness and rating 20-lb. pull per in. of width. The tape will adhere to any dry surface at normal or low temperature. It is resistant to attack by water, oils, chemicals and weathering. It is approved by Underwriters' Laboratories, Inc. and rates 1,400 volts per mil in dielectric strength. Packaging is in 10, 20 and 66-ft. rolls in ½ and ¾-in. standard widths.

If you write maker identify as IEN - 7655

PUMP . . Two stage rotary to handle fuel oil, 3 to 20 gph.

Source: SUNDSTRAND MACHINE TOOL CO.
2529-33 Eleventh St., Rockford, Ill.



Patent applied for

Self-purging design features the oil circuit in this new Model-H Roto-Roll fuel-oil pump so only solid oil will reach a burner nozzle. An adjustable piston type valve can be set for pressures between 75 and 150 pounds. The oil flows through a removable strainer. The pumping members are hydraulically equalized. The new pump has interchangeable mounting with the company's previously developed Models R, J, K, S-1 pumps. Five sizes range in capacity from 3 to 20 gph. The pump is suited for two-pipe installations with vacuum to 20 in. in its intended service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 7656

Twisted Wire Brushes IN 54 STANDARD SIZES

• Now, for the first time, you can order Mill-Rose precision made twisted wire brushes in 54 standard sizes . . . both single and double spiral for hand or power operation. Size range is from 5/16 inch to 1" diameter and 1¾" to 3" brush length.

Mill-Rose also manufactures a wide line of special twisted wire brushes for many diversified uses in industry . . . all made to close specifications of carefully selected types of wire.

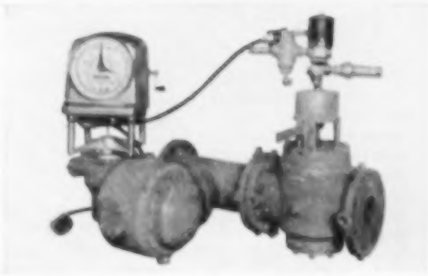
If you need twisted wire brushes for any purpose write today for the Mill-Rose Standard Brush Bulletin . . . If special brushes are needed, send specifications for a quotation.

THE MILL-ROSE COMPANY
7901 EAST 50TH STREET • CLEVELAND 5, OHIO

HIGH PRECISION MILL-ROSE INDUSTRIAL BRUSHES

If you write maker identify as IEN - 7657

When engineers think of Automatic Batching they automatically think of



THE Fluidometer SYSTEM

Bulletin F149 sent on request.

HETHERINGTON & BERNER INC.
Engineers—Manufacturers
723 Kentucky Ave. Indianapolis 7, Ind.

If you write maker identify as IEN - 7658

FREE!

BRAKE & CLUTCH DEMONSTRATION

• Start it . . . stop it . . . inch it—test the lightning speed, powerful torque, instant response and sensitive control of the new, compact Warner electric brakes and clutches. If you have a machine starting or stopping problem, a Warner electro-magnetic unit may be the answer that adds materially to the efficiency and overall performance of your equipment. A letter to us, or a call to your Warner representative will bring a *working demonstration*—no cost or obligation, of course.

WARNER

WARNER ELECTRIC BRAKE & CLUTCH CO.
BELOIT, WISCONSIN, U. S. A.

If you write maker identify as IEN - 7659

New MOTOR Catalog

GET THIS COMPLETE LISTING of electric motors for every purpose. Shows motor types, construction features, ratings, mechanical and electrical modifications available, NEMA definitions and much other useful data to help you.

To get your copy, call your nearby Allis-Chalmers District Office or send coupon today.

ALLIS-CHALMERS A-3325
PO Box 512
Milwaukee 1, Wisconsin
Please send me your Handy Guide to Motors (5186052).
Name
Company
Address
City State

ALLIS-CHALMERS

If you write maker identify as IEN - 7660

NAME THE ALUMINUM SHAPE YOU NEED

Here's a good, dependable source for aluminum extrusions in quantity. Send us your inquiry with adequate information and we will answer promptly. Whatever aluminum shape you need for your product or contract, Youngstown Manufacturing, Inc., can supply. Write, wire or phone.

BUY FROM THE *Big Name* IN THE *Aluminum Extrusion* BUSINESS

YOUNGSTOWN MANUFACTURING, INC.
66-76 South Prospect Street
Youngstown 6, Ohio

SUPERIOR ALUMINUM EXTRUSIONS

If you write maker identify as IEN - 7661

INSULATION

THERM-O-FLAKE
HIGH TEMPERATURE VERMICULITE INSULATION

Chem-Brix
CHEMICALLY BONDED REFRACTORIES

REFRACTORIES

GOOSE LAKE
FIRE CLAY BRICK AND CLAYS

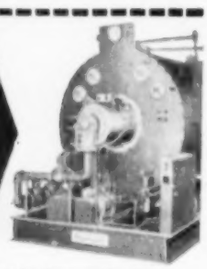
Illinois Clay Products Company

STEEL MEN! FOUNDRYMEN!
Send for Booklet today!

JOLIET, ILLINOIS

If you write maker identify as IEN - 7662

ONLY THE *Powermaster*® GIVES YOU *VORIFLOW*® COMBUSTION!



Latest Development in Burner Design Saves Fuel and Man-Hours

1. Wide range modulation between high and low fire at full efficiency—you use less fuel. 2. Freedom from carbon cuts clean-up time and expense—actually by 50%. 3. Change from oil to gas (or gas to oil) in a few minutes.

To Cut Your Steam Costs Mail Coupon Today

ORR & SEMBOWER, INC. • 860 Morgantown Road • Reading, Pa.
Please send me free copy of the POWERMASTER catalog.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

If you write maker identify as IEN - 7663

DRIVE . . Adjustable pitch sheaves rate to 15 hp., 9 to 1 ratio range

Source: GERBING MFG. CORP.
11803 Milwaukee Ave., Northbrook, Ill.

Turn knob, change speed

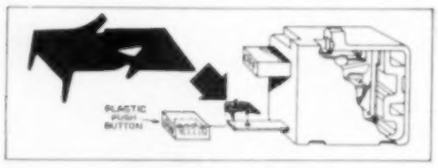
Application, on fixed centers, of a pair of the company's adjustable pitch sheaves, previously described IEN,8737-51, and addition of a means for manual adjustment of the one operating on the motor shaft increases the previous ratio range of 3 to 1 to a maximum 9 to 1. Internal design of each sheave is the same as in the original unit in which the two sheave flanges are secured to sliding keys carrying rack teeth that engage a central pinion. Movement toward or away from center is equal on the two sides so the V-belt will remain on center at any pitch adjustment.

Largest sheave in the line measures 13 in. in flange diameter by 12½ in. in overall length. Two stock bores for motor mounting are 1¼ and 1⅝ inches. The drive takes a standard variable-speed rubber V-belt.

If you write maker identify as IEN - 7664

FASTENING . . Formed steel clip to secure pushbutton on a switch arm

Source: SHAKEPROOF INC.
252 St. Charles Road, Elgin, Ill.



For appliances, controls

New clip has been designed to apply on a flat switch-actuating finger. It presents prongs that will secure a plastic pushbutton pressed into place over the clip. The unit will fit any size or thickness of switch arm providing the anchoring hole in the arm is correctly placed with reference to the end. Then the anchoring prong in the clip and the two anchor shoulders at the end can be snapped into place. Overall dimensions are ⅜ by ¼ inch.

Identify as IEN - 7665

Non-productive material control names a department at Chrysler in Detroit. The name is taken from the fact that the department makes nothing but money for the company. This interesting non-productive operation receives all the worn out hand and cutting tools on their way to scrap. It salvages, reworks, re-assigns. It screens all new tool requisitions before they are put through the purchasing department to fill the requisition if possible from its reclaimed stocks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7666

BALL BUSHING

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Most designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, in fact wherever any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for ¼", ⅜", ½", ⅝", 1", 1½" and 2½" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

The BALL BEARING for your **LINEAR MOTIONS**

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Also manufacturers of RTLUBE Bearings — Surface NYLON, with its a metal shaft — for rotation and reciprocation.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as IEN - 7667

Tube Swelling Can't Happen Here

NO TUBE SWELLING . . . NO PRESSURE LOSS . . . WITH THIS SPECIAL STAINLESS STEEL INNER WIRE BRAID

Concord #20
STEAM HOSE

Patented CONCORD #20 Steam Hose is constructed with a special stainless steel inner wire braid that cannot swell.

This means you always have a full pressure flow because tube constriction can't occur.

Re-coupling is performed easily, quickly, with no complications.

Other construction features include — alternate high tensile steel wire and rubber layers firmly bonded over the outside of the tube for maximum burst protection. Asbestos braid provides positive cover adhesion and acts as cover insulator. Tough, abrasion-resistant cover withstands the most severe abuse.

CONCORD #20 . . . flexible, tough, dependable . . . is the steam hose you'll want to have working for you!

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER CO.
Distributors in all Principal Cities
PLANT: Cambridge, Mass. • P.O. Box 1071, Boston 3, Mass., U.S.A.

If you write maker identify as IEN - 7668

fmc

Industrial BOX FRAMER

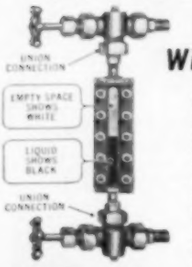
With three strokes on one machine a single operator frames a box in less than one minute. Makes any size box from 19½" to 50" long x 9" to 26" square. *Ten times faster than hand nailing. Write for illustrated bulletin.*

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
RIVERSIDE, CALIFORNIA DEPT. D

If you write maker identify as IEN - 7669

PENBERTHY LIQUID LEVEL GAGES

Can be Removed and Replaced Without Shutdown



PENBERTHY REFLEX GAGE

Union connections between the gage and the valves permit removal of gage for repairs without shutting down the equipment. Just close the valves, uncouple the unions and remove the gage. The convenience of this is obvious. When glasses have to be replaced or repairs made, it is not necessary to work in an awkward position or to shut down. Another advantage: a gage needing repairs can be replaced immediately by a spare and the repairs made at leisure. There are many other reasons for the superiority of Penberthy Liquid Level Gages; ask for Catalog 35.

PENBERTHY INJECTOR COMPANY
DIVISION OF THE BUFFALO-ECLIPSE CORPORATION
Established 1886 DETROIT 2, MICHIGAN Canadian Plant, Windsor, Ont.

If you write maker identify as IEN - 7670

Rough on Floors? you can't faze TUFF-TEX!

Tuff-Tex* will take all that the traffic will bear from scuffling feet...shunting trucks...vibrating machines. And it's *greaseproof!*

Installed quickly, economically. Simple to maintain. Dirt and grime won't penetrate through the surface.

Get in touch with your Tile-Tex* Contractor. Or, for new Tuff-Tex folder, write:

THE TILE-TEX DIVISION, *The Flintkote Company, 1234 McKinley Street, Chicago Heights, Illinois.*

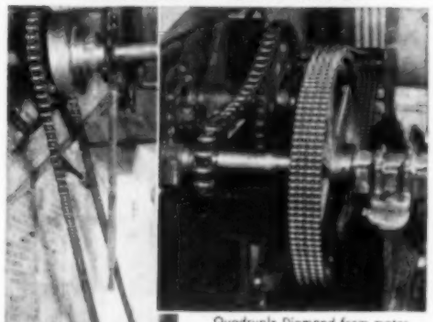
The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada.

* Registered Trademark, The Flintkote Company

TUFF-TEX ... *Greaseproof Industrial Tile*

If you write maker identify as IEN - 7671

EVERYDAY PLANT JOBS DONE BETTER WITH DIAMOND ROLLER CHAINS



Quadruple Diamond from motor and single from jackshaft to mixer provide simple, double reduction unit.

Here's a plant-executed Diamond application using single strand chain from jackshaft.

In your shop there are many everyday jobs where power transfer is required, from motors or engines to main shafts, shafts to shafts—for conveyor operation and miscellaneous purposes.

Diamond Roller Chains, in pitches from ¼ in. to 2½ in., offer wide choice for the majority of plant jobs. They meet speed requirements, don't slip or creep, have high efficiency of 98-99%, and because of uniform high quality, reliably insure long-life high-output performance with little or no maintenance or replacement trouble.

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue
Indianapolis 7, Indiana

Offices and Distributors in All Principal Cities

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

If you write maker identify as IEN - 7673

TESTING . . Stress-rupture machine, loads specimen at high temperature

Source: ARCWELD MFG. CO.
138-42 46th St., Pittsburgh 1, Pa.

A Heppenstall design

Creep tests are performed on this new machine under loads to 12,000 lb. and temperature to 1,800 deg. F. The electrically heated furnace in which the specimen is enclosed while under tension is carried in adjustable counter-balanced position on one side of the upright housing. The lever-suspended load is on the opposite side of the housing where it rides above a lifting platform. This platform positions itself to remain about ½ in. below the weight pan so the shock of dropping weights is minimized when the specimen breaks from the test.

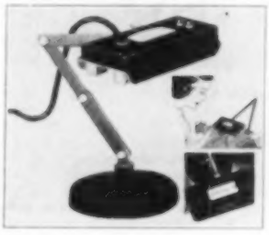
The machine is designed for stress-rupture testing where a specimen must withstand a constant load at a constant temperature for a certain minimum period of time and must break with a certain per cent of elongation. Temperature control for the electric furnace is mounted on a removable stainless steel panel. It will hold the specimen temperature within 1 deg. F. at 1,200 deg. F. for long periods.

The specimen grips are of heat-resistant alloy steel. Extension grips are made of heat-treated chromium-plated steel. The lower extension grip is keyed to prevent rotation. Specimens of sub-standard size can be tested after adjusting a counterbalance on the top lever arm. Floor space measures 43 by 20 inches. Overall height is 84 inches.

If you write maker identify as IEN - 7674

TESTING . . Ultraviolet fixture and magnifying lens for inspection use

Source: NORCO PRODUCTS MFG. CO.
392 Bleecker St., Dept. IE, New York 14, N. Y.



List is $28.25

The operator holds a work piece under the 2½ by 1-in. 2X lens in the housing of this new fixture. The work is thus exposed to ultraviolet radiation from two Blacklite lamps assembled in the housing. The lamps provide the illumination required to detect erasures or alterations in documents, expose fingerprints on colored surfaces, check penetration of preservatives into woods, leathers, differentiate between butter and margarine, detect decomposition due to mildew.

The lamps have 4-watt rating with Angstrom output in the 3,600Å range. They operate at about 120 deg. F. for an intensity value of about 30 watts on 60-cycle 110-volt ac. The housing is supported on an assembly of links that rides a weighted base to position on a desk or bench.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7675

PHOTO EQUIPMENT... Geared to SCIENTIFIC and INDUSTRIAL Uses

FREE CAMERA, LENS and EQUIPMENT **CATALOG**

NEW—72 pages crammed with THOUSANDS of newest PHOTO TOOLS, CAMERAS, LENSES, PROJECTORS, Lighting Equipment, Developing Equipment, ENLARGERS, etc. for the amateur and professional, in every day SCIENTIFIC and INDUSTRIAL work.

CAMERAS — Commercial — Recording — Identification — Special Purpose — Polaroid Land Back — Laboratory — Photomicrography — etc.

ENLARGERS — Reducers — Copying, etc.

LENSES — Largest stock from ⅜" to 72" — all speeds — Portrait — Commercial — Wide Angle — Tele-Lens — Coating, etc.

PRINTING EQUIP. — 35 Mm. to 8x10 in. etc.

PROJECTORS — Demonstration and Instruction.

LABORATORY EQUIP. — Stainless Steel, Slide Equip., Dryers, etc.

Burke & James, Inc.
311 S. Wabash Ave. Chicago 4, Ill. U.S.A.

The Photographic Equipment Specialists
54 Years

If you write maker identify as IEN - 7676

Cut Repeating-process Costs With Time Switch Control

- TSA-14 timer cuts waste, saves money
- Gives accurate, uniform operation
- Handles cycles from 10 sec. to 8 hrs.

Contact your nearest G-E sales office.
General Electric Co., Schenectady, N. Y.
63-134

GENERAL ELECTRIC

If you write maker identify as IEN - 7677

9 means to the same end —

LOWER COSTS

"Labor costs cut 64%!" . . . "Production doubled!" These are typical of the enthusiastic comments we receive when companies start using Millers Falls electric tools.

You'll find spots in your plant where they can do the same for you. Few investments will pay off so fast in lower costs. Write for full details.

MILLERS FALLS COMPANY
Dept. P Greenfield, Mass.

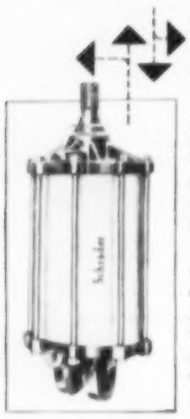
MILLERS FALLS TOOLS SINCE 1868

The Mark of Superiority

If you write maker identify as IEN - 7678

If you write maker identify as IEN - 7679

Let Schrader Air Cylinders shoulder your work load



There are hundreds of places in your plant where you can speed up production and reduce fatigue. Look around—you can undoubtedly find many places where manual lifting, lowering, pushing or pulling is slowing up production. That's where you need Schrader Air Cylinders.

Available for pushing, pulling, lowering or lifting—with or without cushion—Schrader Air Cylinders and Operating Valves are made in sizes and mountings to meet your needs. Write for the Schrader catalog, which gives a full description.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-43, Brooklyn 17, N. Y.

If you write maker identify as IEN - 7680

DO YOU HAVE A HOPPER FEEDING PROBLEM? HERE'S THE ANSWER... The VIBROLATOR

Rugged, effective vibration without damage to your bins and hoppers when you use the patented Peterson pneumatic VIBROLATOR.

Effective all-directional vibration for moving stubborn materials in hoppers and bins. Instantly self-starting, no lubrication or maintenance needed. A variety of sizes available to meet all applications.

WRITE for complete description, installation data and sizes—

MARTIN ENGINEERING COMPANY
KEWANEE 2, ILLINOIS

If you write maker identify as IEN - 7681

CUT FINISHING COSTS 50%

HERE'S HOW: Make the easy profitable "Waste Barrel" test. Cut out a letter size sample of used abrasive belt, picked at random from your plant waste barrel—include the belt joint, if possible. Send us your sample with completed coupon.

IN MOST CASES, after carefully analyzing your scrap sample, our experienced abrasive engineers can recommend a Jewel Brand Coated Abrasive Belt that will do a better job, faster . . . at greatly reduced costs. Numerous tests have shown that the proper selection of a Jewel Brand Belt can cut finishing costs in half! Worth trying?

HERE'S YOUR OPPORTUNITY to take quick action. Send us your test sample with completed coupon now. There is no obligation of any kind attached to this FREE OFFER.

ABRASIVE PRODUCTS, INC.
541 Pearl Street, South Braintree 85, Mass.

HELP me complete the Waste Barrel Test.
Enclosed is a sample of used belt from our plant.
NAME ..... POSITION .....
COMPANY .....
ADDRESS .....
TYPE OF PRODUCT ..... MATERIAL .....
WE USE APPROXIMATELY ..... BELTS PER MONTH
BELT LENGTH ..... BELT WIDTH .....

If you write maker identify as IEN - 7682

CONVEYING . . Portable belt assembly to handle work from under a machine

Source: RAPIDS-STANDARD CO.
342 Rapistan Bldg., Grand Rapids 2, Mich.

To reach in under

Press-Veyor, Jr., is a new adjustable assembly of motor drive, cleated belt and supporting frame to handle small work and scrap from under shop machines in a production line. It is available in 4, 6 and 8 ft. lengths with 4, 8 and 12-in. belts. The belt rides on a 12-gage steel plate. Guard rails prevent the material from catching or being damaged.

The belt is subject to specification in cotton, neoprene or water-proof woven cotton with steel cleats spaced on 24-in. centers. Standard speed is 55 fpm. with higher or lower speeds when specified. The motor is available for operation on any standard single or three-phase circuit.

If you write maker identify as IEN - 7683

PYROMETER . . Portable hand unit for surface and immersion application

Source: PYROMETER INSTRUMENT CO.
90-94 Portland Ave., Bergenfield 21, N. J.

The meter is shielded

Five ranges are included in a new line of Pyro pyrometers starting at 0 to 300 deg. F. and extending to 0 to 1,200 deg. F., or the equivalent Centigrade. Readings are made on a 4¾-in. dial. Fourteen types of thermocouple and extension arm suit various surface and sub-surface applications.

The thermocouples apply with a new quick-change connector that snaps into position and requires no tightening. They can be interchanged without need for recalibration.

Identify as IEN - 7684

New application has been found for Carlon flexible plastic pipe as an underground and underwater conduit for electric circuits. The pipe can be installed quickly. It is an excellent electric insulator and is not subject to rot, corrosion, chemical deterioration. It is available in 400-ft. lengths, can be spliced with plastic fittings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7685

STANDOUT IDENTIFICATION
- at the right price!

METAL NAME PLATES by

CHICAGO THRIFT-ETCHING CORPORATION

Spotlight your product with a sparkling metal name plate that reflects quality, lends distinction and assures permanent readability. Ask us to quote on name and instruction plates, dials, panels, etc. We also apply special finishes to aluminum products and parts including ANODIZING by the exclusive Alumilite process. Write today for information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Ave., Chicago 22, Illinois, Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

If you write maker identify as IEN - 7686

LOW COST PROTECTION FOR MAN AND MACHINE

ELASTICONE®
GUIDE PIN COVERS

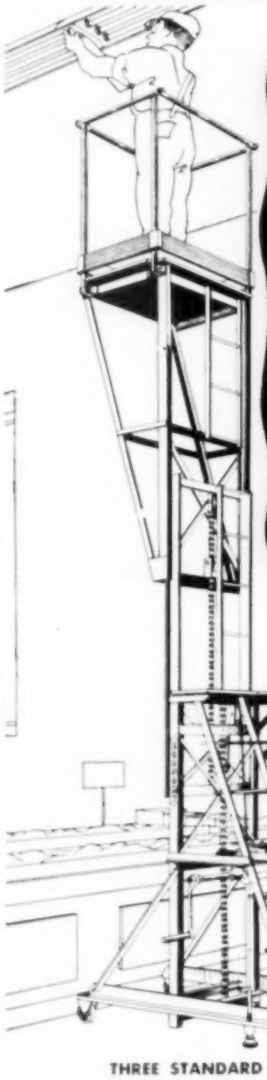
JUST SNAP INTO PLACE
NO TOOLS REQUIRED
NO INSTALLATION COSTS

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering.

Protects Pins and Bushings from nicks, scratches . . . prevents injuries to Die Setters & Operators. Write for full information.

CENTRAL SAFETY EQUIPMENT COMPANY
2200 E. HUNTINGDON STREET, PHILADELPHIA 25, PA.

If you write maker identify as IEN - 7687



Safety for Overhead Jobs
HI-REACH PLATFORM TELESCOPER Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 7689

Drive out

FOUL AIR

Blow in

FRESH AIR

with Coppus Type A Ventilator

Assure greater safety, comfort for workers . . . get greater efficiency.

Drive out dangerous fumes, gases, stagnant or hot air from boilers, cable manholes, tanks, vats and other confined places. *Supply fresh air continuously.*

Send now for further information. Coppus Engineering Corporation, 147 Park Avenue, Worcester 2, Mass.

MANHOLES made safe for workers' entrance within minutes.

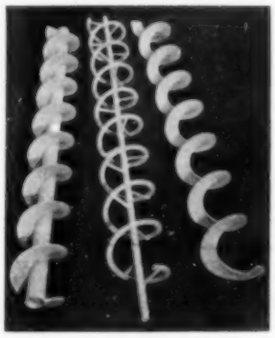
BOILER AND TANK INTERIORS cooled by Coppus. Fresh air supplied continuously.

ANOTHER **COPPUS** "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 7690

WORMS AND SPIRALS

to bore, convey, extrude, feed, process



Let us make them for you to your specifications or supply them from stock in standard designs immediately

Send your blueprints for quotation

JAMES EAGEN & SONS

WEST WYOMING, PA.

If you write maker identify as IEN - 7691

PUSH BUTTON INSULATION RESISTANCE TESTING

with

VIBROTEST

- RANGES TO 50,000 MEGOHMS
- NO CRANKING
- NO LEVELING
- ALL-ELECTRIC
- RUGGED
- FULLY PORTABLE
- ACCURATE

VIBROTEST is built throughout to make insulation resistance testing FAST, EASY and ACCURATE for you. No laborious cranking . . . No mechanical parts to get out of order . . . Only two binding posts for ALL tests. Several Models have A.C. and D.C. volt ranges, as well as low resistance ohmmeter.

This is an instrument that makes insulation resistance testing a "push-button" affair! Ask for more information.

WRITE FOR BULLETIN 2-A

ASSOCIATED RESEARCH, Incorporated

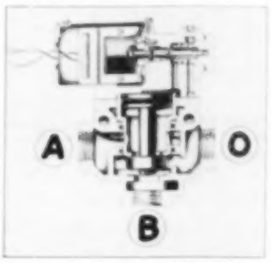
"Precision Instruments Since 1928"

3762 West Belmont Avenue • Chicago 18, Illinois

If you write maker identify as IEN - 7692

VALVE . . Two and three way designs for pneumatic pilot pressure operation

Source: HANNIFIN CORP.
1108 S. Kilbourn Ave., Chicago 24, Ill.



Assures correct operation

Fail-safe action is assured by this new Type B-3 assembly in the company's Series-B line of Pilot-Master solenoid - controlled pilot-actuated valves, previously described IEN-5732-52. The new design differs from the previously described B-2 valve in design of the pilot mechanism so it operates on differential air pressure and requires no return spring. Thus the pressure in the line is employed to return the valve to normal or inoperative position the instant the solenoid is de-energized. In application, as on a press, sufficient air will be retained in the press brake and clutch cylinders, immediately following a break or serious leak in the air line, so the valve will be returned to normal and the press will be shut down.

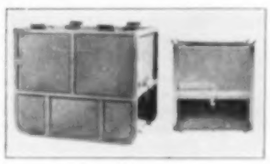
The main portion of the valve is the same as the B-2 previously described. It can be operated either two or three-way normally closed or normally open to pressure in a range between 40 and 125 pounds. The solenoid can be disassembled and is available with coils for operation on 110, 220 or 440-volt, 25 or 50/60-cycle ac.

One pilot head fits all five sizes of the master valve in the range between ⅜ and 1¼ inches. Feature of the master valve itself is in the cartridge assembly of the cylinder and operating parts for removal and replacement as a unit.

If you write maker identify as IEN - 7693

HANDLING . . Work parts box, drop bottom for feed to a machine

Source: ROURA IRON WORKS
1399-03 Woodland Ave., Detroit 11, Mich.



Specified sizes

Drop-Bottom designates this new reinforced steel work-handling box. It has been designed to carry work from one operation to another and also into and out of storage. It can be filled and brought to a machine, set up on a suitable support and its bottom dropped to present an opening at one end measuring 13 in. in height by 31½ in. in width. The worker can remove parts one at a time from this opening for feed to a machine without having to reach up or down.

Overall dimensions are 48 by 36 by 39 inches. Weight is about 400 pounds. Shoulder pieces at the top permit secure stacking in storage and also provide shoulders with which the box can be lifted by overhead equipment. When the bottom is up in closed position the base presents an opening at each end for entry of a fork or platform lift truck.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7694

BEST DEFENSE AGAINST CORROSION

Start with

TYGORUST

"the no-prep vinyl primer"

- minimizes surface preparation
- brushes easily—sprays beautifully
- dries hard in 5-15 minutes
- covers up to 500-600 sq. ft./gal.
- goes under any type finish
- adheres to wet or dry rusted steel, to wood, to concrete, or to previously painted surfaces.

Finish with

TYGON "Series TP" PAINT

"the vinyl finish of maximum protection"

- easily applied by brush or spray
- fast drying and non-oxiding
- fully flexible and chip-resistant
- non-flammable when dry
- easy to clean and long lasting
- resists fumes and spillage of acid, alkalies, oils, greases and water.

Write for full details — ask for Bulletin 720!

U. S. STONEWARE CO.

AKRON 9, OHIO

If you write maker identify as IEN - 7695

M&M air fluff paper shredder

The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

MITTS & MERRILL

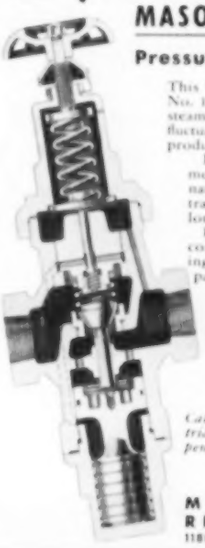
1014 South Water • SAGINAW, MICH.

If you write maker identify as IEN - 7696

Supersensitive!

MASONEILAN No. 11

Pressure Reducing Valve



This better-than-ever Masoneilan No. 11 Reducing Valve pinpoints steam pressures. Even the slightest fluctuations in reduced pressure produce instantaneous response.

Dependable — superfinished moving parts practically eliminate sticking or corrosion. Extra sturdy construction insures long life.

Economical — maintenance consists of little more than keeping the moving parts clean. All parts may be removed for cleaning with the valve in the line.

Initial pressures up to 250 lbs. reduced to any desired pressure between 10 and 90 lbs. or 75 and 225 lbs. Sizes ½" to 2" with bronze body. (Also available in iron and steel.)

Call your Mason-Neilan Industrial Distributor for fast, dependable service.

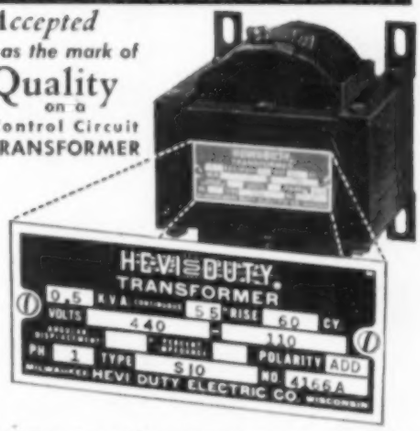
MASON-NEILAN REGULATOR CO.

1188 Adams Street, Boston 24, Mass.

If you write maker identify as IEN - 7697

HEVI DUTY ELECTRIC COMPANY

Accepted as the mark of **Quality** on a Control Circuit **TRANSFORMER**



Hevi Duty Control Circuit Transformers are designed specifically for control circuits where high inrush currents occur. When quality and consistent dependable performance are important, Hevi Duty Transformers are specified. Sizes 250 VA and larger are available. Write for complete information.

HEVI DUTY ELECTRIC COMPANY

HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 7698

"MOTO-TRUCS

are more dependable
and give longer service
greater value"
say MOTO-TRUC USERS

Their shorter turning radius and rugged power enable them to do jobs no other "Walkie" can do.

● Since 1936, when Moto-Truc brought the first motorized hand truck, they have proven their superiority for all operations in the "Walkie Field."

● From zero cold to desert heat, they work with steady efficiency day after day. Ease of operation (all controls in handle), and a minimum of repair and replacement expense make them the favorite of both Labor and Management.

A "twist of the wrist" does it.

SEND FOR Bul. No. 51

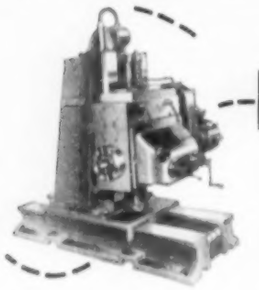
DON'T BE SATISFIED WITH LESS THAN THE BEST.

THE MOTO-TRUC CO.
1953 E. 59th ST., CLEVELAND 3, OHIO
PALLET, PLATFORM AND HI-LIFT TRUCKS

If you write maker identify as IEN - 7699

FORNEY

BORING *and* FACING MACHINE



★ *Boring*
★ *Facing*
★ *Milling*
★ *Tapping*
★ *Drilling*

WRITE FOR NEW BULLETIN

Designed to eliminate conventional overhang for necessary bar travel providing greater resistance to bending stresses when boring — greater rigidity when milling — increased capacity when facing. Numerous applications can be made in boring, facing, drilling, tapping and milling. Duplicator attachments available. Standard model weighs 10,000 pounds.

FORNEY'S INCORPORATED
Manufacturers of Special Machinery Since 1916
ELM ST NEW CASTLE, PENNSYLVANIA

If you write maker identify as IEN - 7700

Engineering Data

Complete, concise, practical . . . dealing with the application of SYNCHRON timing motors, time machines, gear trains, and D.C. motors for special timing jobs.

To Help You

solve your timing problems, adapting standard timing machines or designing new.

Design for Defense

Hansen D.C. Motors powered Servo units in last World War. Improved products, and enlarged design and manufacturing facilities for precision production are available for defense contracts.

Pulls up to 8 oz. dead load at 1 R.P.M. Operates efficiently at -40° to +140°F. Available with gear trains to convert any speed.

SYNCHRON timing motors

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 7701

We wonder if you would like to have a plant poster that would carry a heading WHAT'S NEW? and then read about as follows—

"New and improved products help to reduce production costs and improve our own products. Keep posted on new and improved products which may apply to your department or job. Check monthly issues of Industrial Equipment News now on file in _____."

Identify as IEN - 7702

On one side is your standard business card. On the other is a color reproduction of any picture of your choice. It can be purely scenic or can portray your product or place of business. It's a new Marks & Fuller card development.

Identify as IEN - 7703

You can filter flammable fluids without danger of an explosion if you employ the new explosion-proofed Titeflex filter. The motor and switch are enclosed. Pipe connections are welded. Valves are designed so they also can be welded in place. The filter elements are stainless-steel well-screen membranes. Standard filter area is 1 to 50 square feet.

Identify as IEN - 7704

Townsend Twinfast trade names new source for the double-thread wood screw we originally described in IEN back in 1943. The screw advances twice as fast as a single-thread screw. It is available in a range of sizes in steel or brass.

Identify as IEN - 7705

Try some Tropical Roof Coolerant as a means to minimize heat transmission through your roof this summer. It's an aluminum paint developed to reflect heat from the sun's rays. Unskilled labor can brush or spray it on.

Identify as IEN - 7706

U. S. Electrical Motors has completed a new sound-color motion picture that runs for twenty minutes to show you steps in the manufacture of an internally-geared motor and applications of this motor in service. A showing can be arranged without obligation on your part.

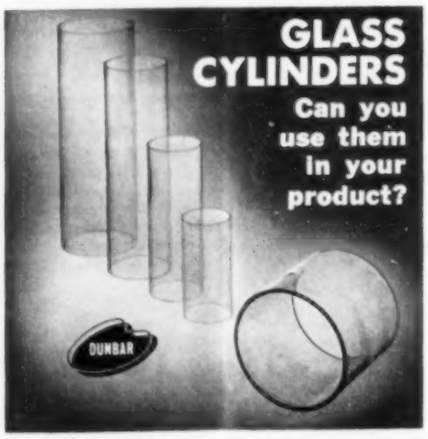
Identify as IEN - 7707

Miniature reproduction of a clutch and brake of Warner electric design with a driving motor and pushbutton control has been assembled for demonstration on your desk. You can see just how both mechanisms operate as you push the buttons.

Identify as IEN - 7708

Rubber rings are fitted to the handle of new Wilton vises to ride just inside the ball ends. Now a worker is protected against pinched hands if he lets go of the handle so it drops in its hole in the vise head.

If you write maker identify as IEN - 7709



For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 972 for our Glass Cylinder catalog No. C-51.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO • LOS ANGELES

If you write maker identify as IEN - 7710

YOU BE THE JUDGE!

...a simpler, better Hose Clamp

Got a job for a hose clamp? Before you fill it, send for a sample of the Corbin Self-Tightening Hose Clamp. Discover how much easier and quicker it is to install. How it forms a positive seal even on irregular castings. Why it never needs adjustment. Why shellac isn't necessary.

Leading manufacturers are using them by the thousands on automobiles . . . home appliances . . . aircraft . . . pumps . . . machinery . . . air conditioners . . . because they've proved *best by test* . . . and most economical. Write Corbin Hose Clamp Division, The American Hardware Corporation, New Britain, Conn.

CORBIN **Self-Tightening HOSE CLAMPS**

If you write maker identify as IEN - 7711

"Lightnin' Mixers"

Two ¾ HP LIGHTNIN Mixers provide violent, controlled agitation in this heat treatment installation recommended by United States Steel for the Columbus Bolt & Forging Co., Columbus, Ohio.

Violent agitation of the quench bath can help you get steel of uniform hardness and microstructure with less distortion, assuring fewer rejects, minimum retreating. Tests show Brinell hardness can be increased up to 50% or more.

LIGHTNIN Mixers are used in the improved heat treatment method often recommended by United States Steel and now used in many plants. This method increases mechanical properties, reduces cracking, improves machinability. Controlled agitation of the quenching bath with LIGHTNIN Mixers extracts heat rapidly and uniformly from all surfaces of a part.

There's a LIGHTNIN Mixer for every fluid agitation job. Sizes range from 1/30 to 500 HP. Mixco engineers use exclusive data to give you quick, correct answers to any fluid agitation problem. Every LIGHTNIN is unconditionally guaranteed to do the job for which it is recommended. Write today for full facts on LIGHTNIN Mixers and MIXCO engineering service.

EVERY LIGHTNIN MIXER IS GUARANTEED TO DO THE JOB RIGHT

PORTABLE ¼ to 3 HP — SIDE ENTERING 1 to 25 HP — TOP ENTERING ¼ to 500 HP

Write for illustrated bulletins

MIXCO FLUID AGITATION SPECIALISTS

MIXING EQUIPMENT CO., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto

If you write maker identify as IEN - 7713

LET'S GET IT STRAIGHT!

The "DIMENSIONAIR" Air Gage —

IS calibrated accurately over its entire range

IS set accurately with only one master

HAS a range of .003" with 2500 to 1 magnification

HAS much longer plug wear

HAS greater plug clearance so that the same plug can be used on both rough and finished dimension

REMAINS stable for long periods of time

Yes, let's get it straight, the Dimensionair does away with the limitations common to previous types of air gages.

Federal Dimensionair Proves Itself

Find out what the Federal Dimensionair will do for you! Discover how the exceptional measuring range of .003" lets you gage irregular shaped and tapered holes. Oil or coolants won't affect the Dimensionair: grit and dirt won't clog it: rough handling won't harm it. Write for complete information. FEDERAL PRODUCTS CORPORATION, 1291 Eddy Street, Providence 1, Rhode Island.

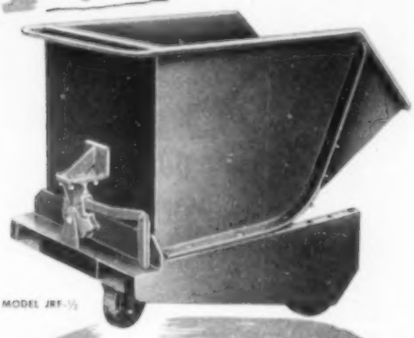
FEDERAL

Largest manufacturer of indicating type gages . . . exclusively.

If you write maker identify as IEN - 7714

Ideal

FOR PUSHING BY HAND . . . OR FORK LIFT TRUCK USE



MODEL JRF-½

Phillips

PHIL•DUMP Junior

Correctly sized for speed and convenience when being transported by hand . . . the Phil-Dump Junior is sturdily built to withstand rough service when being handled by fork lift trucks. With its capacity of one-half cubic yard, this valuable materials handler features a self-dumping hopper . . . which returns and locks in the loading position after it has been emptied.

For outstanding economy through years of service the Phil-Dump Junior is ruggedly made of an all-welded, steel construction. The rear wheel is castered for ease in maneuvering; hard rubber tires prevent damage to plant floors.

Write for Bulletin E-1A

VERSATILE IN SERVICE

Without danger of tumbling the hopper, the Phil-Dump Junior can be emptied while still on the fork lift truck.

MANUFACTURERS SINCE 1861 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2300 JANE STREET · PITTSBURGH 3, PA.

IDEAS FOR YOU — Continued

Identify as IEN - 7716

A Pittsburgh firm of engineering designers has completed arrangements to take 90 of its employees to Europe on a Purposeful Tour late in July. It is representative of organizations participating in the program developed by World Travel Plan. The firm is claiming the cost of the trip as a deductible item on its income tax return. A folder describes the plan.

Identify as IEN - 7717

The Armco Flex-Beam guardrail, familiar to motorists on the sides of the highway, makes an excellent protector for walls, partitions and equipment in a plant. The rail is made of spring quality steel and is punched to mount on about 12 foot centers. You do the erecting.

Identify as IEN - 7718

Armco stainless steel No. 17-7 PH is proving excellent for use in precision miniature electric switches. Not only is it resistant to corrosion but it also has excellent spring qualities and retains them in service.

Identify as IEN - 7719

Bakelite Company can tell you about a new method and the equipment and materials employed to make quick inexpensive splices in heavy trailing cable in the field. A coal company worked it out and developed the wheel-mounted equipment. It employs Vinylite resin plastisols and copper thermit conductor welding. A two or three-conductor, No. 4, 2 or 1, cable can be spliced by one man in about thirty minutes.

Identify as IEN - 7720

Carboloy carbide is being used successfully in a press operation to shear flash from a run of steel castings. The carbide applies at six insert positions, three on opposite faces of the U-shaped punch. Shear lengths are ¼ to ⅜ inch on the SAE 1045 casting. Carboloy will send you a sketch.

Identify as IEN - 7721

How many of the things you build in your shop for your own use might be purchased instead? That question came up again when we received information on a home-made elevating mechanism to do a specific job. We know of at least three manufacturers who have an almost exact duplicate of that mechanism in their regular lines, probably better by having been service proved, probably less expensive also. Let IEN know of equipment you have in mind to build so we can tell you who may be making it for sale.

Identify as IEN - 7722

Flexible Elliott drive shaft has taken the place of some twenty mechanical parts in the bobbing mechanism on a knitting machine. The shaft delivers 20 inch pounds of torque, measures about 18 inches in length, carries over from the inside to the outside of the machine frame in a compound curve. The maker will supply a sketch of the installation and of the eliminated parts.

Identify as IEN - 7723

Hycar rubber is the Goodrich material employed in a new two-piece bearing-type seal to stop oil leakage from the main bearing at the rear of a gasoline engine. The half-seals are fitted around the crankshaft and tightened together. A metal base backs up the rubber, prevents distortion.

Identify as IEN - 7724

Charts have been prepared to show capacity curves for Gould storage batteries. They provide a means to select the correct battery for a given power requirement. The curves represent capacity per positive plate against the ampere discharge rate for a given temperature and to a specified final voltage. The charts and instructions are available on request.

If you write maker identify as IEN - 7725

FOR LOWER COST *Gas Heating* select **Janitrol** UNIT HEATERS

LOWER INITIAL COST OPERATING COST MAINTENANCE COST

30 Sizes—Types

Janitrol offers the most complete line of Unit Heaters to meet individual requirements.

If you are planning on modernizing your heating—need supplementary heat for plant enlargement—if you are building or leasing an industrial building—you can save on equipment, operating and maintenance costs with Janitrol Unit Heaters. Remember, you get more worthwhile design features with Janitrol, plus proven performance.

Write today for complete specifications.

SURFACE COMBUSTION CORPORATION • DEPT. F, TOLEDO, OHIO

If you write maker identify as IEN - 7726

SAFETY INSURANCE

for Magnesium Finishing

AAF'S Type N ROTO-CLONE Bench provides complete control of toxic or hazardous dust. This down-draft ventilated workbench performs all three functions of exhausting, collecting and storing dust in one compact unit. Safety factors include no moving parts, pumps or collecting surfaces, and dust storage under water level. Write for Engineering Bulletin No. 277A.

AAF American Air Filter COMPANY, INC.

335 Central Avenue, Louisville 8, Ky.

American Air Filter of Canada, Ltd., Montreal, P. Q.
Pacific Division Office, San Francisco, California

If you write maker identify as IEN - 7727

New! Industrial Tissues

Automatic serve-up packages

For Wiping and Polishing

Wiping precision instruments

Let clean, *disposable* KIMWIPES* industrial wiping tissues standardize—and economize—your cleaning operation. Soft, yet strong, they're ideal for cleaning precision tools and instruments. Recommended for use on finely finished surfaces. And highly absorbent KIMWIPES remove dust, dirt, grease and oil—quickly, safely.

The Bureau of Federal Supply stocks Kimwipes size 15" x 10" in all Supply Centers under stock item #53P23121-800.

Polishing machined parts

Kimwipes

INDUSTRIAL WIPING TISSUES

*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION, IEN-752
Neenah, Wisconsin
Please send me Kimwipes literature.

Name .....

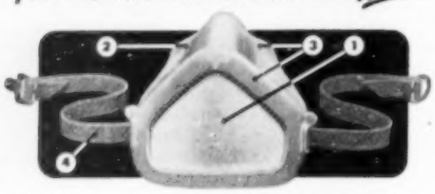
Firm Name .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN-7729

4 Reasons why FLEX-A-FOAM (and only FLEX-A-FOAM) provides Dust Protection your workers will welcome and Wear



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.

2. Perfectly contoured for self-adjusting fit to every size and shape of face — designed for wear with spectacles or goggles with perfect comfort.

3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.

4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

FLEX-A-FOAM FILTER MASK

Sample $1.40 postpaid

Write for new descriptive folder

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

If you write maker identify as IEN-7730

UP and DOWN LIGHTING for better seeing conditions Wheeler DIFFUSER TYPE FLUORESCENT FIXTURES

Get the benefits of greater seeing comfort — reduced brightness contrasts — with the new DIFFUSER TYPE Fluorescent Fixtures — pioneered by Wheeler! Apertures located in the top of the all-white porcelain enameled steel reflector direct approximately 5% of the light upwards . . lessen contrasts . . provide more comfortable seeing and working conditions. Fixtures are available for use with all Slimline and General Line Fluorescent Lamps. Write Wheeler Reflector Company, 275 Congress Street, Boston 10, Massachusetts.

Wheeler REFLECTORS

MADE BY SPECIALISTS IN EQUIPMENT SINCE 1901

If you write maker identify as IEN-7731

Don't Handcuff That Engine!

STOP Costly Cylinder Wear with the UNIVERSAL TOP OILER

- Reduces Valve and Ring Failures
- Lowers Fuel Octane Requirements
- Reduces Oil and Gas Consumption
- Frees Sticking Valves
- Increases Payload Power

The Universal Top Oiler assures constant, uniform top cylinder lubrication on all types of internal combustion engines by metering vaporized top oil through the intake manifold. When used with an approved upper-cylinder lubricant, it neutralizes corrosive acids, stops carbon and gum formation, prevents dryness in the hottest, busiest part of the engine. Easy to install. List price $8.95.

Provides maximum benefit when used continuously with Universal Top-Oil. Write for full details.

Gentlemen:
Please send complete information on the UNIVERSAL TOP OILER and the new Universal Top-Oil.

Name _____

Address _____

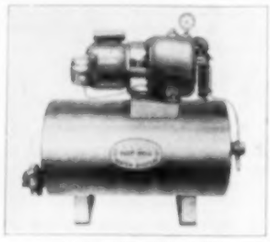
City _____

UNIVERSAL LUBRICATING SYSTEMS, INC.
703 ALLEGHENY AVENUE • OAKMONT, PA.

If you write maker identify as IEN-7732

PUMP . . Motor driven centrifugal with booster jet and pressure tank

Source: GOULDS PUMPS INC.
301 Fall St., Seneca Falls, N. Y.



Ask for Bulletin 4574-J

Figure 3681 is a new assembly of self-priming motor-driven centrifugal pump with a booster jet to assemble in a well casing and a pressure tank for water supply service. The equipment applies in connection with a well in which the water level is not more than 50 ft. below the pump. Capacity ranges to 450 gph. Overall size is 33 by 14 by 29 in. including the 17-gal galvanized tank.

The pump is driven by a direct-connected ¼-hp. 110-volt 60-cycle single-phase motor operating at 3,500 rpm. The shaft is sealed mechanically. Pressure and suction lines connect through a jet head and strainer-equipped foot valve for assembly in the well.

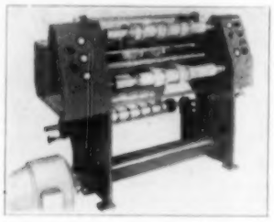
Operation is controlled by an adjustable pressure switch actuated by air pressure in the tank. A float-operated fitting mounted on one end of the tank meters air to the interior so the correct amount is maintained without need for attention. At the opposite end of the tank is a pressure control valve.

Cast-iron parts coming in contact with the water are protected with a baked finish resistant to corrosion. Installation can be made at some distance from the well to permit running pipes below the frost line. Single-pipe equipment is available for 2 and 2½-in. wells. Twin pipes apply in 3 and 4-in. wells.

If you write maker identify as IEN-7733

CUTTING . . Slitter and rewinder for plastic film, foil, laminates

Source: JOHN DUSENBERY CO.
269-73 Grove Ave., Verona, N. J.



To 500 feet per minute

Model 585 is a new slitting machine employing either razor blades or rotary cutters in connection with a grooved slitting roll. The machine will cut webs of film, tape, foil and rewind them in widths starting at ⅝ in. to 12-in. diameter on 1 or 3-in. cores mounted on the rewind shaft. Alternate cut strips move from the cutting roll to upper and lower rewind shafts so adjacent strips do not rewind together. Speed is maximum at about 500 fpm. Width increments are in 1/16-in. steps.

Operation is controlled by hydraulic pressure acting upon clutches on the two rewind shafts and on locks that hold the rewind mandrels in position. Air applies also in a brake on the mill-roll shaft at the rear of the machine. Shafts operate in sealed ball bearings. The mandrels and the shaft supporting the mill roll can be removed and replaced quickly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7734

Coiling upward action of KINNEAR ROLLING DOORS gives you EXTRA SPACE

Valuable working and storage space is saved by the use of Kinnear Rolling Doors, which open straight upward and coil above the doorway. All floor and wall areas around the door, inside and out, are fully useable at all times.

The rugged, steel slat construction of Kinnear Rolling Doors assures long life protection at lowest operating cost. Push-button, motor-driven operation gives instantaneous action, controllable from one or several locations. Write for complete details.

The KINNEAR Manufacturing Company

Saving Ways in Doorways KINNEAR ROLLING DOORS

Factories: 2380-2400 Fields Ave., Columbus 16, Ohio, 1742 Yosemite Ave., San Francisco 24, California
Offices and Agents in Principal Cities

If you write maker identify as IEN-7735

For the Answer to Your Insulation Problem LOOK THROUGH This LINE

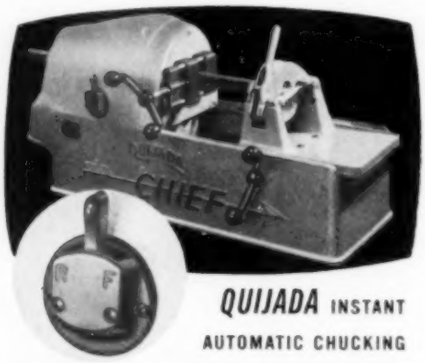
Can't guarantee that the Varflex Line will solve every insulation problem. But . . . Many's the problem—large, small, unusual—that Varflex Electrical Sleeving or Tubing has solved. The Varflex range of application is vast—chances are you'll find the solution to your Electrical insulating problem somewhere in the Varflex Line.

Varglas Silicone retains properties at 500° F or −85° F. **Varglas Tubing Impregnated with General Electric Permatil**, tough, flexible, heat-resistant. **Varglas Sleeving and Tubing**, numerous types and grades. **Varglas Non-Fray Sleeving**, for temperatures up to 1200° F. **Varflo Tubing and Sleeving**, made of Fiberglas, priced like cotton. **Varflex Cotton Tubing and Sleeving** where Fiberglas is not required. **Syntholvar Extruded Plastic Tubing**, made from vinyl polymers.

Free—For free folder of our complete line, just drop us a card today.

VARFLEX CORPORATION
306 N. Jay St.
Rome, N. Y.

If you write maker identify as IEN-7736



QUIJADA INSTANT AUTOMATIC CHUCKING

CUTS PIPE AND CONDUIT THREADING TIME

The only truly automatic chuck on any threader. No more wrestling with stubborn chucks . . . just pull the switch lightly to chuck and push to unchuck. Four jaws front and rear securely grip and center pipe. Cut hours from your present threading methods with EASE!

SEE YOUR JOBBER OR WRITE FOR CATALOG #117

QUIJADA TOOL CO., INC.

5474 ALHAMBRA AVE., LOS ANGELES 32, CALIF.

If you write maker identify as IEN-7737

No Wonder LESTO IS THE LEADER IN PORTABLE Electric HAND SAWS

Designed, Manufactured and Patented by Scintilla, Ltd., Switzerland, since 1944.

SAWS
- 2" Hard or Soft Wood
- Curves of All Types
- Insertions
- Plastics

Write for Literature
Sold & Serviced in Principal Cities Throughout U.S.A.

VICTOR J. KRIEG, Inc.
Sole U.S. Representative for Scintilla, Ltd., Switzerland
51 West 32nd St., New York 19, N. Y.
ELdorado 5-6030
Some Sales Territories Available

If you write maker identify as IEN - 7738

SEND for this booklet on Vibration Control by Vibra-Mounts. It describes the new, simple, economical way to obtain up to 85% reduction in transmitted vibration, increasing plant efficiency, protecting machines, instruments, buildings and personnel. Vibra-Mounts can be installed quickly by superintendents and maintenance men.

Booklet sent FREE on request.

American Felt Company
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SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Dallas, San Francisco, Los Angeles, Portland, Seattle, San Diego, Montreal. — PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. I. — ENGINEERING AND RESEARCH LABORATORIES: Glenville, Conn.

If you write maker identify as IEN - 7739

COMPARE THE RESULTS
you can get from these FREE samples of amazing DRIPRINT paper!

SAMPLES

Write on your company letterhead for stock samples, sent without obligation.

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DRIPRINT
TRADE MARK

Better, ready-to-use direct positive prints are yours in seconds with DRIPRINT

Whether you want prints with black, blue, red or sepia lines, you'll get better results with DRIPRINT. Made directly from your translucent original without a negative, these superior Dietzgen ammonia-process prints on paper or cloth give you denser, sharper lines on pure white backgrounds every time.

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EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

If you write maker identify as IEN - 7741

LATHE . . Bench design with ½ and 1 in. collet capacity

Source: ATLAS PRESS CO.
2391 N. Pitcher St., Kalamazoo, Mich.

Catalogs C-2 and C-2A

The company announces purchase of Clausing Mfg. Company and continuing manufacture of an improved design of that company's Series 4800 and Series 6300 Clausing lathes. Both series are available for work capacities measuring 24, 36 and 48 in. between centers with 12¾-in. swing over the bed and thread-cutting range in 48 steps between 4 and 224 threads per inch, either right or left hand, to meet requirements.

Series 4800 mounts its spindle on Timken tapered roller bearings and provides ½-in. collet capacity. A built-in countershaft is equipped with a friction clutch and brake. Quick-change gear shafts ride on ball bearings. The motor mounting is integral and calls for a ½ or ¾-hp. motor operating at 1,725 rpm. Twelve spindle speeds are between 48 and 2,270 rpm. The tool post takes a holder for ¼-in. tool bits.

Series 6300, as shown in the illustration, mounts its spindle on Timken tapered roller bearings also. It is available with either countershaft or variable-speed drive, the latter in a range between 30 and 1,400 rpm. Its tool posts take a holder for 5/16-in. bits. Its collet capacity is 1 inch.

If you write maker identify as IEN - 7742

FASTENING . . Flush self-closing latch for use on metal, plastic, wood doors

Source: HARTWELL CO.
9025 Venice Blvd., Los Angeles 34, Calif.

Latch normally closed

Two buttons take the place of the tilting plate in this new design of the company's flush self-closing latch. The plate design, known as Type H-4000, was previously described IEN-5601-51. The new unit, Type H-4100, mounts the push-type trigger button on the latch frame and a pull button on a rocker arm that extends to the left of the frame opposite to the end at which the retracting latch is located. Pressing the trigger button retracts the latch against spring action and causes the pull button to rise so it can be grasped in order to open the door or panel in which the unit is assembled.

Assembly is from the back of a door panel with two drilled holes to clear the buttons. Standard button offset provides for door panel thickness measuring 0.031 to 0.188 inch. The main frame measures about 1⅞ by 1½ in. in length and width. Construction can be specified in corrosion-resistant steel, in cold rolled cadmium plated steel and in aluminum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7743

Compare this Toledo No. 999 gear-train with others in portable 2" pipe machines and you will appreciate Toledo's superiority! It's *your* money you are spending. Get Toledo value! Wheel or knife cut-off. High production, dependable... ask your distributor. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

Heavy duty gear-train means "plenty of guts" in Toledo No. 999 2" Pipe Machine!

TOLEDO
PIPE TOOLS . . . POWER PIPE MACHINES

If you write maker identify as IEN - 7744

Watch Dog
STARTERS

stop blink of aging lamps

You'll find it's true . . . if you select fluorescent fixtures displaying the General Electric Watch Dog tag or label, you won't be bothered by "lamp blink" — the on-and-off flicker of a worn-out fluorescent lamp. Watch Dog starters cut such lamps out of the circuit — prevent hurried calls for maintenance men. Watch Dogs last longer than ordinary starters too — up to five or six times. 34 million sold to date. So look for the Watch Dog tag when you select fixtures. Section Q8-742, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

*Registered Trademark of General Electric Company

You can put your confidence in . . .

GENERAL ELECTRIC

If you write maker identify as IEN - 7745

THE M.S.A. "MECHANICAL NOSE"

Sniffs out Combustible Gas Hazards

The M.S.A. Combustible Gas Alarm is easy to install, simple to operate. Available in custom built panel mountings, or units for wall mounting.

The super-sensitive "nose" of the M.S.A. Combustible Gas Alarm scientifically detects the presence of combustible gases and vapors in the air, and sounds an alert before dangerous concentrations are reached.

Operating continuously, this explosion-proof instrument samples the atmosphere at predetermined points where explosive mixtures are most likely. Should concentrations build up to danger limits, an alarm system consisting of a horn and flashing red light, gives workers time to take corrective action.

If you are concerned with combustible gas hazards, you'll find it worthwhile to investigate the many operating features of this device. Write for complete details.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Sts.
Pittsburgh 8, Pa.
At Your Service
68 Branch Offices in the United States

If you write maker identify as IEN - 7746

Fire-Fighting Equipment

Triple-Action Nozzle Discharges Water Three Different Ways To Cut Fire Losses

Rockwood SG-48 Nozzle discharges high-velocity WaterFOG, straight water stream or low-velocity WaterFOG . . . to help you put out fires faster in ordinary combustibles and flammable liquids.

Made of light-weight aluminum alloy, it's as easy to handle as it is versatile. It comes in ¾", 1", 1½", and 2½" sizes to give you a choice of the following discharge ranges at 100 p.s.i. at the nozzle:

High-Velocity WaterFOG	20 to 50 feet
Straight Water Stream	50 to 100 feet
Low-Velocity WaterFOG (through extension applicator)	10' to 22' diameter

Bulletin C501 gives you the whole story on Rockwood SG-48 Light-Weight Triple Action WaterFOG Nozzles. Write for your free copy today.

ROCKWOOD SPRINKLER CO.
Engineers Water . . . to Cut Fire Losses
40 HARLOW STREET, WORCESTER 5, MASS.

If you write maker identify as IEN - 7747

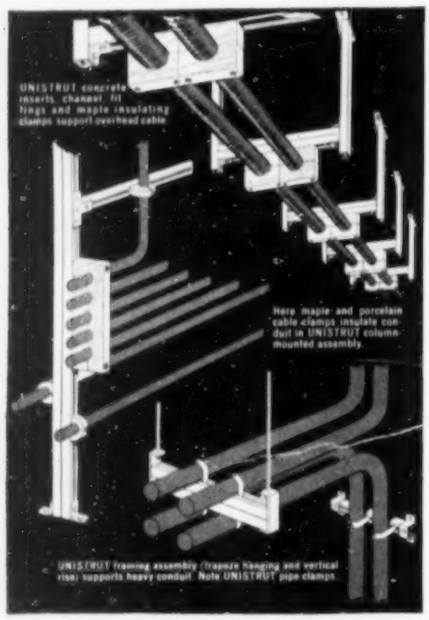
MYSTIK Spra-Mask

Gives you Hand-Lettered Results with Speed and Low Cost of Stenciling

For fast, easy stenciling, get MYSTIK Self-Stik Spra-Mask. Die-cut to any design you wish, it sticks firmly to the surface to be painted, permitting one-man operation. There's no bleeding through the mask or under the edges to worry about. Just put it in place, cut the ties and spray. That's all you need to do for sharp, clear stencils. Available die-cut, in sheets, or in rolls of blank stock up to 36" x 60 yards inclusive. Write for information and free samples.

Mystik Adhesive Products,
2644 N. Kildare,
Chicago 39.

If you write maker identify as IEN - 7748



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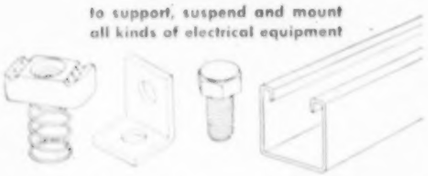
to support, suspend and mount all kinds of electrical equipment



No drilling, no welding, no special tools or equipment — versatile UNISTRUT framing permits adjustments, changes or additions to be made at any time.

The UNISTRUT method conserves steel, reduces man-power hours, cuts overall costs.

New FREE Construction Catalog. Write today for your copy of 78-page Catalog No. 700. Includes above and countless other drawings on how to mount, rack and frame all kinds of electrical and mechanical equipment.

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Ill., Dept. D7

Please send Free Catalog No. 700

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 7750

MAGNIFYING . . Microscope, polarizing design for laboratory use

Source: AMERICAN OPTICAL CO.
Box AA, Buffalo 15, N. Y.

Operates in reverse

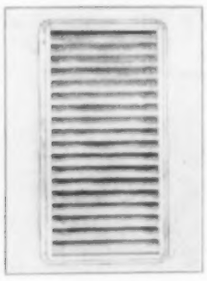
Specimens are mounted on 45 or 75-mm. slides to apply on a rotating stage under a ring-type clip in this new Type P-45 microscope. The stage carries five deg. graduations. It permits making angle measurements to within one degree. Built into the enclosed sub-stage is a full-field illuminator that operates with a disc-type diaphragm to permit selection of five sizes of aperture. The instrument provides magnification to 450x.

Focusing knobs for quick approach and final adjustment are mounted on the side of the instrument. Double, triple or quadruple nose-pieces can be selected. A slot in the body tube takes standard compensators. Spring-loaded focusing takes up any wear. A pin-hole eye piece or a special telescopic eye piece can be used to observe interference figures. The standard eye-piece tube takes measuring accessories. The polarizer consists of a special disc mounted in optical glass and placed above a heat-absorbing plate in the sub-stage assembly.

If you write maker identify as IEN - 7751

SHUTTER . . Multiple vane panel to control air flow to engine enclosure

Source: CADILLAC CO.
Race & Jay Sts., Coldwater, Mich.



Extruded aluminum is employed in construction of the vanes in this new shutter assembly. The vanes are mounted in 5/16-in. bronze bearings in the aluminum frame. Neoprene is inserted along the edge of each vane to provide tight closing. The vanes are connected at the rear of the assembly for operation by thermostatic control to maintain a predetermined opening under given temperature conditions. Sizes range from 6 by 6 in. to 60 by 72 inches. Each unit is built to meet specified requirements of the user.

Identify as IEN - 7752

Harnischfeger has found a way to insure safety and clear vision in the cabs of its big cranes and excavators. It is now glazing the cabs with CR-39 cast-plastic sheets. The material is as clear as plate glass. The plastic will not craze and has excellent resistance to abrasion. It is tough, can be used indoors or outside. It is chemically inert except to organic acids. It is highly resistant to hot metal spatter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7753

WHY FIGHT *frozen Studs, Nuts or Bolts?*

"JOHN CRANE" PLASTIC LEAD SEAL®

stops leaks.... prevents thread seizure

Why use a red or white lead pipe dope on your threads, when Underwriters' Approved non-hardening Plastic Lead Seal will do the job so much better?

It costs no more to use the best. The original application is no more expensive — yet it means that you can forget leakage worries...that you will never be faced with breaking a frozen connection, stud, bolt, or nut!

Make your first Plastic Lead Seal application now. Write us — we'll send a free sample.

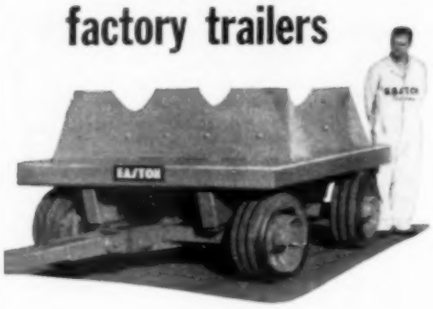
CRANE PACKING COMPANY
1815 CUTLER AVENUE · CHICAGO 13, ILL.

If you write maker identify as IEN - 7754

A-1000

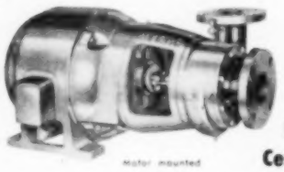
EASTON

heavy-duty dependability in yard and factory trailers



EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

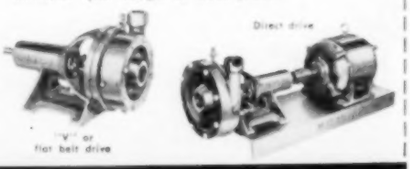
If you write maker identify as IEN - 7755



Motor mounted

High and Low Head Centrifugals

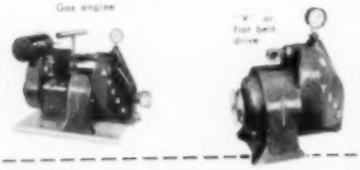
Standard fitted, all bronze or all iron for handling many different liquids, including inflammables. Impeller is mounted on motor shaft to insure perfect alignment and balance. No sub-base required. 1750 and 3500 rpm. Single or three phase.



MYERS Centrifugal Pumps

"HN" Series

Ideal for delivering large capacity against average pressures; for booster service, circulating uses, as a heat pump, or for hot water. Designed for continuous operation. Up to 50 gpm.



Got a Pumping Problem?

Our engineers will be glad to show how Myers Centrifugal Pumps can solve your problem. No obligation.

THE F. E. MYERS & BRO. CO.
154 Orange St., Ashland, Ohio

If you write maker identify as IEN-7757

THINKING OF NEW PRODUCTS?

consider the basic advantages of MASONITE PRESDWOOD®

Hard • Dense • Smooth • Grainless • Great structural strength • Resist moisture • Resist weather • Resist abrasion • Resist chipping • Resist many chemicals • Won't split • Won't splinter • Won't crack • Won't dent • Dimensionally stable • Uniform structure • Equal strength in two directions • Easily laminated • Won't rust or corrode • Can be punched • Can be drilled • Can be sawed • Can be routed • Can be shaped • Can be veneered • Can be die-cut • Can be bent • Take and hold applied finishes.

There are 59 types and thicknesses of Masonite Hardboards ready to serve you. For technical data and suggestions on solving your production problems, write—

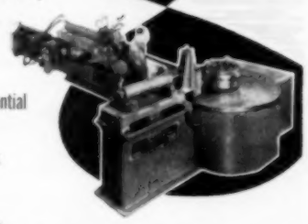
MASONITE® CORPORATION
DEPT. IEN-7, BOX 777, CHICAGO 90, ILL.
"Masonite" signifies that Masonite Corporation is the source of the product
BETTER HARDBOARDS FOR BETTER PRODUCTS

If you write maker identify as IEN-7758

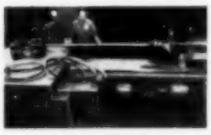
LEADING AIRCRAFT MANUFACTURERS ARE BUYING BATH

RADIAL DRAW CONTOUR FORMERS

For forming accurately full circular jet and fuselage members and effecting substantial savings thru close tolerances

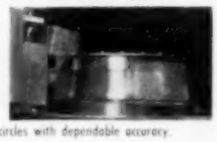


BATH FOR JET RINGS and FUSELAGE MEMBERS



And no wonder! Using brake-formed strip stock or roll-formed sections and only one die, the Bath Radial Draw forms up true rings.... cross section constant and true to template.... no blanking, no waste of expensive material.... savings—terrific! Vitally important in most major jet engine and aircraft programs.

BATH FOR STRETCH FORMING SHEETS and EXTRUSIONS



Specifying Bath Radial Draw Contour Formers for stretch forming work is best insurance for accuracy of product. Sheets formed into smooth tapered shapes inexpensively on one die.... extrusions formed in varying planes and full circles with dependable accuracy.

BATH FOR COMPRESSION FORMING TUBES, EXTRUSIONS, ROLL-FORMED and BRAKE-FORMED SECTIONS

Large tubes and other sections not suited to stretch forming can readily be compression formed in unlimited variety of contours for aircraft.

FOR FURTHER INFORMATION ON BATH RADIAL DRAW CONTOUR FORMERS WRITE FOR THIS 32 PAGE CATALOG CF-352

THE CYRIL BATH COMPANY
MANUFACTURERS OF METAL FORMING MACHINERY
6935 MACHINERY AVENUE • CLEVELAND 3, OHIO

If you write maker identify as IEN-7760

CRANE . . Power hydraulic boom and winch mount on 1½ ton truck

Source: PITMAN MFG. CO.
302 W. 79th Terrace, Kansas City 5, Mo.

Ask for Model B specifications

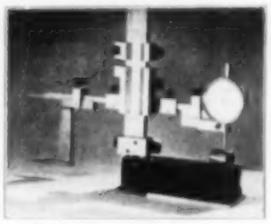
New design of the Hydra-Lift power-hydraulic crane, previously described IEN-7620-51, is now available for general duty on 1½-ton or larger truck. Refinements in the design increase the safety factor and improve the operating characteristics. Capacity is the same as in the original design. The same telescoping boom is employed with provision for setting at 12, 17 and 22 ft. lengths. When set at 17 ft. and 45 deg., the load rating is 2,500 pounds.

The truck provides the drive through a power take-off to a Vickers vane-type pump rating 1,500 lb. and 7½ gpm. to swing the boom through a horizontal 180-deg. arc and to raise it through a 100-deg. arc. The power take-off also operates a Tulsa No. 19 winch for the ½-in. wire-rope load line. Load capacity on this line is 6,400 pounds. Outriggers can be let down to the ground. Control centers either in the truck cab or at levers at one side where the operator can work in seated position. Mounting space of 40 in. is required behind cab.

If you write maker identify as IEN-7761

GAGE . . Double scale vernier unit sets to zero to measure up or down

Source: BRAND TOOL & SUPPLY CO.
905-9 S. Victory Blvd., Burbank, Calif.



20, 30 and 40 inch sizes

Two scales, each with a vernier are mounted for screw-controlled end adjustment in the column of this new height gage. One scale reads upward with the base line as zero. The other reads in reverse in 5-in. sections starting at "5" on the base line. The arrangement of scales and vernier slides makes it possible to read up or down from any given point without having to calculate differentials after the scales have been set initially.

The scriber is hardened, ground and lapped. It adjusts outward to measure at 8 in. beyond the base of the 20-in. gage. The base, also is hardened and ground, provides a reference surface for a dial indicator on which work dimensions can be checked. An attachment scriber is available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7762

Turn to this NAYLOR Service

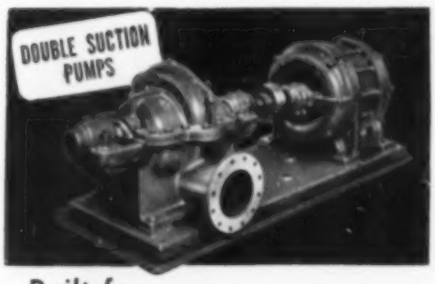
Naylor engineers have developed special techniques to hold fabrication work to extremely close tolerances. As a result, you can depend on Naylor to fabricate your fittings, manifolds, piping and other units to the most exacting specifications. Whether your needs are simple or complex, Naylor engineers will be glad to work with you.

Send specifications or drawings for quotation

NAYLOR PIPE

NAYLOR PIPE COMPANY
1225 E. 92nd St., Chicago 19, Ill.
New York Office:
330 Madison Ave., New York 17, N. Y.

If you write maker identify as IEN-7763



Built for
LOW MAINTENANCE

GENEROUS CONSTRUCTION with extra metal thicknesses, extra strong parts, extra construction features and extra careful workmanship means lower pumping costs for you. Every pump tested on most modern equipment in industry. Each installation individually engineered.

Horizontally split casing, ball bearings, balanced impeller, wearing rings, hand finished water passages, cast shaft sleeves, generous stuffing box length. Choice of iron, bronze, stainless steel.

Standard sizes from 10 to 7000 gpm with 475 foot head. Larger sizes available. For complete information, call your Allis-Chalmers Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin for bulletin 08B6146.

A-3320

ALLIS-CHALMERS

If you write maker identify as IEN-7764

ELIMINATE WIRES

through use of
DU PONT CONDUCTIVE COATINGS

Easily and rapidly applied by spray, brush, dip, stencil to metals and non-conductors, they give a conductive surface of low resistance. One troy ounce covers about 3 sq. ft. Use them in printed circuits for radios, amplifiers, switchboards, meters; for capacitors and couplings; for static shielding to replace foils and cans; for resistors and solder seals. Save hours of time, $$$$ of cost! For more information, send for Bulletin CP-2-1247. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN-7765

Switch to
PLATECOIL for
(REPLACES PIPE COIL)

TROUBLE-FREE Tank Heating and Cooling

Platecoils have many times the useful life of pipe coils thus preventing many production delays. When repairs are necessary, plates are changed from outside the tank in a matter of minutes without dumping tank solution. You can save STEEL, MAN-HOURS and MONEY by using Platecoils and you will enjoy TROUBLE-FREE heating and cooling.

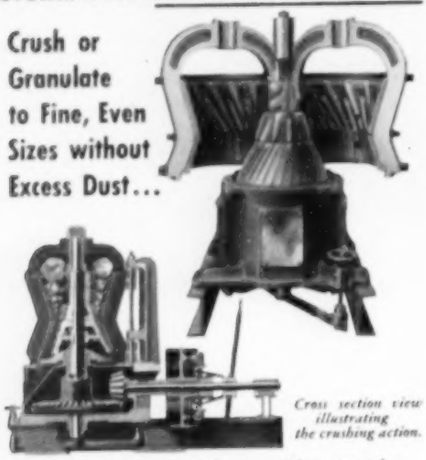
NEW Technical Manual No. P56 simplifies the solution of heat transfer problems. Send for your copy today.

PLATECOIL
Registered
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 7766

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...



Cross section view illustrating the crushing action.

These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 50 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

If you write maker identify as IEN - 7767

How to Reduce DOWNTIME DOWNTIME DOWNTIME DOWNTIME

with STEAM TRAPS

★ Super-Silvertops* reduce downtime since three pipe connections in the head permit these traps to be installed straight-in-line or as an elbow . . . saving 50 minutes whenever a trap is installed . . . 50 minutes whenever serviced.

★ Super-Silvertop valves and seats are made of longer lasting Anderlox* alloy which eliminates continual replacement. The patented guided bucket minimizes bucket damage.

Write for a copy of Anderson's famous 36-page book "Solving Steam Trap Problems."

THE V. D. ANDERSON COMPANY
1931 West 96th Street • Cleveland 2, Ohio
*Trade Marks Reg. U. S. Pat. Off.

SUPER-SILVERTOPS

If you write maker identify as IEN - 7768

Backstand belts cut costs!

Learn more about this money-saving method

The backstand belt method of metal polishing is being used in more and more plants. Why? Because it saves time, cuts costs. Belts cut faster, cooler than set-up wheels — and cut down on the number of your operations. To learn more about this modern method of metal finishing, send for Armour's free booklet, "Backstand-Belt Polishing."

mail this coupon today

Please send booklet "Backstand-Belt Polishing."

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 7769

DRIVE . . Centrifugal clutch for gasoline engine, ¾ to 10 hp.

Source: FARM EASY PRODUCTS INC.
1200 E. Centennial Ave., Muncie, Ind.

Spring adjusts action

Preliminary data has been released by the company on the centrifugal clutch it originally developed for its own use and now is making available for sale to others. Three sizes apply on engine crankshafts ranging from ½ through 1½ in. in diameter. Cut-in speed is adjustable between 1,000 and 1,500 rpm. on the smallest model. It is between 600 and 1,200 rpm. on the larger unit. The hub-mounted friction-band assembly keys to the engine shaft.

The band moves outward by centrifugal force against the action of a spring as the engine comes up to speed. This movement makes contact with a driven drum on which is the driving sheave to connect the engine by V-belt to a driven machine. The drum and sheave are mounted on the hub on an Oilite bushing. Ball or roller bearings can be specified.

If you write maker identify as IEN - 7770

CLEANING . . Solvent Spray machine removes dried paint from spray masks

Source: CONFORMING MATRIX CORP.
330 Toledo Factories Bldg., Toledo 2, Ohio

Safe and fast

Motor-driven pump in the base of this new mask washing machine circulates paint solvent from a return tank through 40 nozzles that direct the solvent against both sides of a spray mask suspended in the open top cleaning chamber. When acetone is employed as the solvent, as many as 25 coats of lacquer have been removed from a mask in 20 seconds. Spent solvent returns to the tank to be recirculated. Sludge is removed at a valve on one side of the housing.

The machine measures 37 by 24 by 47 in. and weighs 325 pounds. It holds 50 gal. of solvent. The cleaning area measures 32 by 6 by 15 inches. The machine has been designed to clean the masks originally developed by the company and previously described IEN 4375-48.

Identify as IEN - 7771

Eriez RCA metal detector has been purchased by a paperboard carton manufacturer to detect the presence of metal particles in folding cartons measuring about 4 by 6 by 2 inches. Previously each carton had to be unfolded and inspected manually to eliminate any chance for contamination of the food product to be packaged. The new equipment and one worker handle 7,000 per hour.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7772

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller
(oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1 **MORE CAPACITY**—for its weight, size and price.
2 **SELF-PRIMING**—starts instantly with high suction lift.
3 **ONE MOVING PART**—tough, long-lived.
4 **GEARLESS**—impeller outlasts metal gears.
5 **TROUBLE FREE**—simple construction.
6 **ECONOMICAL**—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

If you write maker identify as IEN - 7773

SOLVE CORROSION PROBLEMS with TAPECOAT*

The Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings, Tanks, etc.

Here's time-tested, coal tar protection against moisture, acids, alkalis, chemical fumes and other severe conditions—both underground and above ground. TAPECOAT gives greater protection, reduces maintenance and cuts pipe replacement cost. It's easily applied because it's sized to the job. Comes in widths of 2", 3", 4", 6", 18" and 24". It's quickly applied by use of a torch to bleed the coating for perfect bond. Wrapped spirally or "cigarette-wrapped."

Write for details and prices.

*Reg. U. S. Pat. Off.

The TAPECOAT Company
1553 Lyons Street, Evanston, Illinois
Originators of Coal Tar Tape Protection

If you write maker identify as IEN - 7774

NO OTHER OIL HYDRAULICS PERFORM LIKE "COMMERCIAL" OIL HYDRAULICS

Operating pressures recommended up to 1500 p.s.i.

CATALOG H-6 AVAILABLE ON REQUEST

THE COMMERCIAL SHEARING AND STAMPING CO.
YOUNGSTOWN 1, OHIO

"COMMERCIAL"

If you write maker identify as IEN - 7775

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO POST-O-METER

Another Detecto Scale that protects your profits. With the Detecto Post-O-Meter, you just press a key and get one precise to-the-penny magnified figure. Thermoplastic spring compensates for temperature changes.

Write for Catalogue

DETECTO SCALES • INC.
MAKERS OF FINE SCALES SINCE 1900
553E PARK AVENUE • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 7776

Efficient Materials-Handling at the "Grass Roots" level with

colson CASTERS

● No matter how modern or streamlined your truck fleet, it's no better than the wheels and casters it rolls on. Surprising—how a few dollars spent for Colson casters can increase the efficiency of hundreds or thousands of dollars worth of rolling stock. There's a Colson for every need—from light casters for office furniture to heavy-duty jobs of 1500 pounds capacity.

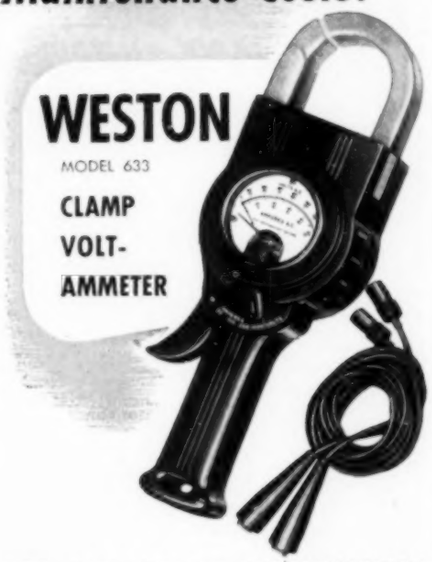
Colson also manufactures a wide range of trucks—hand trucks, platform trucks, box trucks, drum and barrel trucks and Lift-Jack Systems. Write us or consult your phone book under "Casters" or "Trucks—Industrial" for the Colson representative near you.

Write today for free 68 Page Caster Catalog

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • LIFT JACK SYSTEMS • INDUSTRIAL TRUCKS

If you write maker identify as IEN - 7777

It puts the Squeeze on Maintenance Costs!



A-C Current—five full scale ranges of 1000/250/100/25/10 amperes, with range overlap for good readability. Measurements under 10 amperes readily obtained.

A-C Voltage—three self-contained ranges of 700/350/175 volts insure accurate readability, in upper half of scale. Instrument insulated for 750 volt service.

Isolated Voltage and Current—with circuits insulated from each other, instrument can be connected to both voltage and current sources at same time.

Convenient 6 position switch—easily operated with gloved hand, a flick of the thumb selects any current range, or the Volts position.

Adjustable pointer stop—red stop facilitates measuring starting current of motors.

Here's the instrument that produces big savings by slicing hours off maintenance schedules . . . produces worth-while revenue by forestalling costly repairs and shutdowns. Built to WESTON standards of safety, accuracy and dependability. Also available for A-C Ampere measurement only. Order through your local representative, or write . . . WESTON Electrical Instrument Corporation, 617 Frelinghuysen Ave., Newark 5, N. J. . . . *manufacturers of Weston and Tagliabue instruments.*

WESTON

WESTON *Instruments*

. . . TO INDICATE—RECORD—CONTROL

If you write maker identify as IEN - 7779

DRILLING . . Air hydraulic cylinder feeds, retracts, feeds for deep holes

Source: GENERAL PACIFIC CORP.
1503 E. Washington Blvd., Los Angeles 21, Calif.

Cycle action clears chips

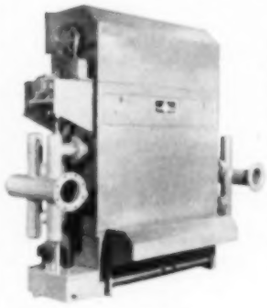
Continuous operation in deep-hole drilling is provided by the automatic cycling action of this new design in the company's line of air-hydraulic drilling-machine feed equipment, previously described IEN-885-51. Following initial start by the operator, the equipment maintains a repeating cycle of rapid approach, feed through a distance variable between 1/16 and 5/8 in., rapid retraction from the hole to clear chips that have been formed, rapid return into the hole, resumption of feed action just prior to the point at which the drill makes contact with the bottom of the hole. The cycle continues until pre-set total depth has been reached then the drill spindle is retracted and the cycle stops. Depth can be set in any amount for which the equipped machine is capable in a single overall feed movement of its spindle.

Application can be made on Buffalo drills in 14, 15 and 18-in. sizes, on Canedy-Otto machines rating 16 and 18 in., on Delta machines rating 14 and 17 in. and on Walker-Turner 15 and 20-in. assemblies. The equipment includes a valve that can be turned to cancel out the cycling operation. Then the feed provides steady action to the predetermined depth.

If you write maker identify as IEN - 7780

COOLING . . Evaporative equipment to cool air coming from a compressor

Source: NIAGARA BLOWER CO.
3117 Chrysler Bldg., New York 17, N. Y.



Acro is the trade name

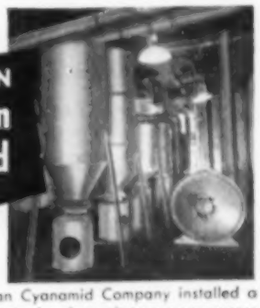
Capacity and size are subject to specification in this new design of the company's line of evaporative type after-coolers. The equipment is intended for installation out of doors with connection into the delivery line from an air compressor. It employs a motor-driven blower to draw atmospheric air into the housing near the bottom from where it moves upward in counter-flow to a recirculating water spray. This provides the evaporative cooling effect upon the manifold through which the compressed air or gas is traveling. Moisture is removed from the air as it continues upward through the blower to the top outlet. The equipment will cool compressed air below atmospheric dry bulb temperature to minimize condensation in the compressed air line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7781

If you write maker identify as IEN - 7782

SPENCER VACUUM IN American Cyanamid Plants



Ten years ago American Cyanamid Company installed a Spencer stationary vacuum cleaning unit to remove excess dusts resulting from the manufacture of plastic powders. Today Spencer stationary units with a total of 135 horsepower are used almost continuously to remove excess powder from floors, machines, walls and pipes. The material is collected by the barrel and sold for fertilizer. Spencer portables are used all over this plant in locations not reached by the stationary vacuum lines.

Spencer Vacuum has more than 100 uses in industry. It reclaims metals, conveys materials, cleans machinery, and goods in process. It handles hot materials, liquids, sand, rice, injurious dusts and gases and invariably pays for itself in a few months. Ask for Bulletin No. 144.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER

If you write maker identify as IEN - 7783

Drawing Reproduction revolutionized

with Kodagraph Autopositive Paper

There are no limitations now on the types of drawings, prints, or documents which can be reproduced at Sikorsky Aircraft, Div. of United Aircraft Corp.

Translucent or opaque—it doesn't matter; even "two-sided" originals can be reproduced on *Kodagraph Autopositive Paper.* And each print is a sparkling intermediate—dense photographic black lines on durable, evenly translucent white paper—*ready* to produce as many direct-process prints as are needed.

How positive photographic intermediates are produced: Autopositive Paper is exposed in Sikorsky's direct-process machine . . . processed in standard photographic solutions. No negative step . . . no darkroom handling—*a revolutionary, economical operation that speeds print service to all departments!*

● **The direct-process prints and blueprints** received from vendors are reproduced on Autopositive Paper when extra copies are needed for the drafting room or shop. Deletions and additions can be made readily on Autopositive intermediates . . . saving drafting time.

● **Six copies are needed of each oscillograph record** obtained while flight-testing Sikorsky helicopters. Autopositive intermediates—which hold the faintest line—are made . . . and used to produce direct-process prints which are sharp and legible in every detail.

● **Engineering department reports,** charts, letters, etc. are reproduced on Autopositive Paper so that the required number of direct-process prints can be made in fastest time. A local blueprinter handles the "overflow" demand for Autopositive intermediates.

Write for a free copy of "New Short Cuts and Savings," which gives typical examples of the way Kodagraph Autopositive Paper is saving time and dollars in thousands of drafting rooms.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

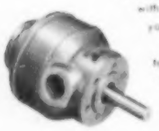
Kodak

If you write maker identify as IEN - 7785

STOP THE PRESSES*!

. . . and install GEROTOR

hydraulic pumps
for improved performance



* Punch presses . . . baling presses . . . straightening presses . . . piercing presses . . . assembly presses . . . plastic presses . . . any hydraulically operated presses work better with GEROTOR Hydraulic Pumps. Whether you build them or maintain them, specify GEROTOR Pumps . . . for pressures up to 1200 p.s.i. continuous, 1500 intermittent . . . deliveries from 4 to 40 g.p.m.

GEROTOR MAY CORPORATION
P.O. Box 86, Baltimore 3, Md.

If you write maker identify as IEN - 7786

When You Buy a
BURGESS-MANNING Acousti-Booth
You Buy a 50%*
Reduction in Noise

When you invest in a Burgess-Manning Acousti-Booth you are purchasing better communications, for your office or plant. Good hearing means fewer errors . . . more work accomplished.

Burgess-Manning booths are pleasing in appearance . . . easy to clean and maintain.

Model 501 Wall Booth of wood construction.

Write for Bulletin A-107

Model 210 Floor Booth of wood construction.

* Results of studies by a prominent research organization.

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 7787

ANGLE STEEL TOOL CABINET
Sturdy-Roomy-Convenient

For use in factories, tool rooms, production departments, factory offices. Essential for on-the-job use when tools and precision instruments are required.
Steel top has turned up edges for keeping tools and instruments from falling off. Single door has cylinder lock mounted in handle.

Specifications:
All steel construction. 24 inches wide, 14 inches deep, 34 inches high.
18 gauge steel top. Two adjustable shelves on 4 inch centers. Olive green finish. Shipped assembled.

Send for FREE Literature.

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

Please send FREE Literature — We're interested in . . . Shop Desks . . . Benches . . . Stools . . . Tool Cabinets . . . Tool Stands

Company

My Name Title

Address

If you write maker identify as IEN - 7788

HOIST . . Hand chain design with I-beam trolley, ½ to 2 ton

Source: HARRINGTON CO.
1651 Callowhill St., Philadelphia 30, Pa.

Trade named Packet

The mechanism in this new hoist is enclosed within two formed steel housing cups in which are mounted factory-lubricated permanently sealed ball bearings for the operating shafts. Load and operating chains extend down through openings in the housing. Lugs welded to the housing shells provide means to assemble the adjustable ball-bearing trolley. Side members of this trolley are steel plates, wheels are hardened high - carbon steel.

Three ratings are ½, 1 and 2 ton with regular lift at 8 ft. for the first two and 9 ft. for the third. Standard I-beam size is 5, 6 and 8 inches. The first two can be adjusted for beams to 10 in., the third for a beam to 12 inches. Minimum distance, hook to bottom of the beam, is 12 to 20 inches. Minimum curve radius is 20 to 36 inches. Weights are 69 to 109 lb. in regular lift height for the electrically-welded heat-treated steel load chain.

If you write maker identify as IEN - 7789

SWITCH . . Precision snap acting, hermetically sealed and water proofed

Source: MICRO SWITCH
30 E. Spring St., Freeport, Ill.

Permanently closed

Sealed contacts and potted water-proof terminal leads are combined in this new Type 4HS switch to provide a unit that can be operated under water without danger of shorting. The leads are potted in a high-dielectric plastic that seals them and their terminals completely. The leads can be made any specified length and can be supplied with water-proof couplings at their outer ends if required.

The metal housing is sealed at the top by a metal diaphragm through which the external actuating lever operates. The contact chamber is filled with an inert gas under pressure prior to sealing. The switch rates 25 amp. on a resistive load at 110-volt ac. It is available in single-pole, single-throw or double-throw contact arrangement with operating force at 16 oz. and release force minimum at 4 ounces.

Identify as IEN - 7790

Ferro packaged dry colors are now available in packages of any specified size for use by injection and extrusion molders of plastics such as lucite, nylon, polyethylene, polystyrene, Plexiglas. A specification sheet lists the standard colors with prices and instructions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7791

"Most of your machinery shutdowns, due to bearing failures, could be avoided with Trabon Lubricating Systems."

Trabon has the only completely enclosed measuring valve that notifies the operator if trouble develops.

Trabon oil and grease systems lubricate as your machines produce . . . guarantee more production, less repair costs, efficient operation, and longer bearing life.

Trabon Lubricating Systems pay for themselves in a short time and bring a handsome profit to owners.

Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

If you write maker identify as IEN - 7792

Quimby the original SCREW PUMP and why they are still preferred:

- ✓ 100% Antifriction Bearing equipped
- ✓ Quadruplicate Non-Slip Screws
- ✓ Balanced Power, Pulseless Discharge
- ✓ Smooth Running and Quiet
- ✓ No Stuffing Box Trouble
- ✓ Direct-Connected to Drivers
- ✓ Ninety Types available
- ✓ Herringbone Driving Gears
- ✓ No Metallic Contact
- ✓ Positioning Bearing

Insist upon the original . . . now owned, manufactured, marketed, serviced and guaranteed by Warren . . . one of America's pioneers of the pump industry.

WARREN QUIMBY PUMPS

CENTRIFUGAL, RECIPROCATING, SCREW, ROTARY
WARREN PUMPS
WARREN STEAM PUMP COMPANY, INC. • 62 Bridges Ave. • Warren, Mass.

If you write maker identify as IEN - 7793

Increase PROFILE GRINDING PRODUCTION 50% TO 75% WITH HECOMATIC

INFEED AND CHUCKING ATTACHMENTS

Illustration shows HECOMATIC at work on 20 mm. projectiles

HECOMATIC is the answer to the problem of automatically feeding, chucking and ejecting profile work on centerless grinders—with greater speed and accuracy.

It proved itself during World War II in munitions plants in the United States, Canada, England and Australia, and is again being made available to the metal working trade and ordnance contractors.

HECOMATIC consists of three light weight units—the magazine, power unit and electric solenoid ejector. Completely automatic, it accomplishes *all* the operations man would do in hand feeding, grinding and ejecting.

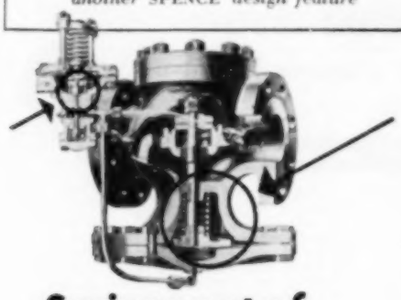
Although originally designed for work on 20 mm. projectiles, slight alterations will permit HECOMATIC to function on almost any type profile grinding job, giving uniform quality of work and production increases of from 50% to 75%.

HECOMATIC ENGINEERING SERVICE — Heco Engineering Department will be pleased to receive your inquiries regarding the Hecomatic method as applied to your profile grinding job.

HECO
HECKETHORN MFG. & SUPPLY CO.
Dept. "I" Littleton, Colo., U.S.A.

If you write maker identify as IEN - 7795

another SPENCE *design feature*



Springs out of path of steam

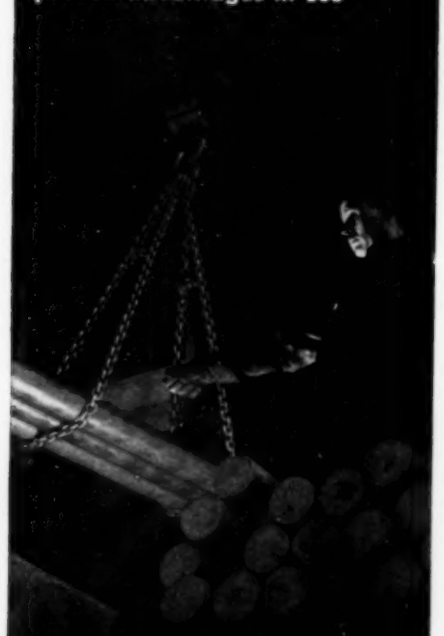
In the Spence Regulator, the springs are out of the path of the steam or other fluid flowing through the valve. They operate at low unit stress for exceptionally long life. Learn more about Spence design features that cut costs of pressure and temperature control. Send for Bulletin 500.

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 7796

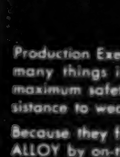
HERC-ALLOY SLING CHAINS

PREFERRED... because of proved advantages in use



Production Executives and Safety Directors look for many things in a sling chain—greatest strength, maximum safety, lighter weight, handling ease, resistance to wear, minimum cost against service life.

Because they found all these advantages in HERC-ALLOY by on-the-job experience, it became a matter of course to prefer and specify HERC-ALLOY Sling Chains.



Write for illustrated Data Book No. 3 which contains helpful information on sling chain selection and use.

COLUMBUS McKINNON CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corp.)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
District Offices: New York • Chicago • Cleveland
Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can., and Johannesburg, South Africa.

If you write maker identify as IEN - 7798

GRINDING . . Surface machine mounts cylinder wheel in work table

Source: PDQ GRINDER CO.
10 Manhasset Ave., Port Washington, N. Y.

For any grindable work

Work pieces to be ground on this new machine are moved by hand over the table top and the working face of the cylinder-type wheel that is mounted vertically in the table. Work is guided laterally by a hinged fence on one side of the table. The amount of stock to be removed is determined by vertical position of the wheel as set at a dial-equipped hand wheel.

Angular as well as flat work can be handled after removing a section along one side of the table so the side of the wheel is exposed for a small distance. The angle portion of the work can then hang downward. In certain cases a vertical face also can be ground.

The wheel measures 12 in. in diameter. The fence permits use of 9½ in. of this dimension for work width. It can be hinged up to clear the complete wheel. Mounting is on a spindle carried by pre-loaded duplex factory-lubricated sealed ball bearings. Drive is by 2-hp. vertical motor.

Overall dimensions at the floor are 3 by 4 feet. Table length is 40 in. and height above the floor is 34 inches. The machine weighs about 1,200 pounds. Motor-driven dust-collecting equipment for dry operation and a motor-driven pump and tank for wet operation can be specified.

If you write maker identify as IEN - 7799

COUNTING . . Pencil type unit is operated by depressing stylus point

Source: MAST DEVELOPMENT CO.
2210 E. 12th St., Room 301-A, Davenport, Iowa

About $30

Dot Counter is a new pencil type instrument with an anodized aluminum barrel that encloses a three-wheel counter. One count is added each time the barrel is moved forward to depress the steel stylus point through its ¼-in. stroke. This stroke is accompanied by rotary motion of the stylus that operates the counter as long as a knurled knob at the rear of the barrel is in locked position. This knob is released by turning. Then it can be pushed into any of three detented positions to selectively reverse the counter wheels and thus either clear a previous count or preset to a desired number.

Actuating pressure is 1 pound. Overall length is about 7½ inches. Barrel diameter is ½ inch. Applications include counting letters in a word, words in a line or sentence, duplicating elements in a drawing or layout, individual particles in an accumulated sample of a material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7800

3 *reasons insisting*
FOR INSISTING ON A-C WELDERS

Few welders available today give you all the features you will find combined in the new line of M&T a-c transformers. These features are:

1. Low open circuit voltage *with* arc stabilization—for greater safety and for a really stable arc free from "pop-outs."
2. Silicone insulation—the greatest contribution to welder design in years—stands up against higher temperatures—moisture resistant—proof against chemical fumes—permits more overloading—assures longer welder life.
3. *Automatic* "hot-start"—provides just the right amount of surge for easy arc starting at any current setting *without* manual adjustment of controls.

More sound reasons for using M&T A-C Welders are in the M&T bulletin giving operating data. Write for your copy.

Contact your local distributor or nearest M&T office.

METAL & THERMIT CORPORATION
100 EAST 42nd STREET • NEW YORK 17, N. Y.

If you write maker identify as IEN - 7801

for your file....

NORTHERN'S LATEST BULLETINS

Write to:
NORTHERN ENGINEERING WORKS
2615 Atwater St., Detroit 7, Mich.
For Bulletins
T-105 AH-103 H-111 HL-115 O-700

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 7802

CASTELL PUSH BUTTON LOCKTITE

the perfectly balanced holder
(black or colored)

An indispensable drawing tool for professional men everywhere — because LOCKTITE holds lead in bulldog grip, prevents it sliding back into holder. Reduces smearing and smudging, because your fingers never touch the graphite, except when refilling. Order from your Dealer today.

No. 9030
CASTELL Refill IMPORTED
Master Degree Leads
7B to 9H

Reproduces more clean, sharp blueprints than any other lead.

The same wonderful imported leads that you get in the CASTELL wood pencil. Usable in all standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

A.W. FABER-CASTELL PENCIL COMPANY, INC. NEWARK, N. J.

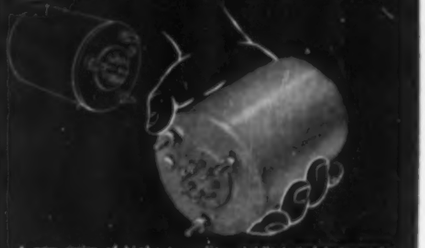
CASTELL the drawing pencil with the Master Degrees

If you write maker identify as IEN - 7803

Hermetically Sealed Instruments by

Cramer

TIME DELAY RELAYS
CIRCUIT RECLOSING RELAYS
RUNNING TIME METERS



A new series of highest quality, rigidly tested instruments enclosed in hermetically sealed containers of approved type to meet military and civilian requirements. These instruments are compact, dependable in every way and designed for efficient performance under specified conditions of altitude, acceleration, inclination, vibration, humidity, salt spray, dust, fungus, etc. They are typical examples of advanced Cramer Time Control Engineering to meet Industry's constantly expanding needs. Write for special Bulletin No. 4000A.

the R. W. CRAMER CO., Inc.
BOX 16, CENTERBROOK, CONN.

If you write maker identify as IEN - 7804

How To
Mark Name Plates In
1/5 the Time

Cutting costs in these times is a good trick if you can do it. You can, on plates requiring detail marking, by using an Automark Electric Metal-Marking Typewriter. The operator lightly touches the key and the Automark does the rest, quickly and automatically. No dial to turn—no lever to pull. Marking output is increased five times and worker fatigue is greatly reduced. Write today for Bulletin 8-16.

AUTOMARK
Electric Metal-Marking
TYPEWRITER
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 7805

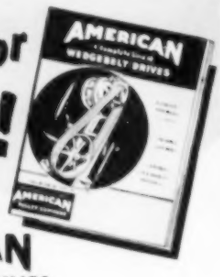
plain-end pipe
***Joined* in 30 seconds**

A permanent, "Flexible-Tight" joint in just 30 seconds. No threading, no exact pipe fitting or alignment necessary. Resilient rubber gaskets in the Dresser Style 63 give you permanent protection against vibration, normal expansion and contraction stresses that spring leaks in other joints. Sizes ½" to 2". Write for catalog.

DRESSER
"NO-THREAD" FITTINGS
Dresser Mfg. Div., 58 Fisher Ave., Bradford, Pa. (One of the Dresser Industries.) Warehouses: 1121 Railroad St., Houston, Tex.; 101 S. Beechler Highway, S. San Francisco, Calif. — Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco. — In Canada: 629 Adelaide St., W., Toronto.

If you write maker identify as IEN - 7806

NEW for YOU!



AMERICAN
WEDGBELT DRIVES
CATALOG JUST OFF THE PRESS!

● Get the complete story on American Wedg-Tite Sheaves . . . American Wedgbelts . . . American Adjustable-Speed Drives. Find out how—and why—American Drives are best for you . . . Cost-wise! Production-wise! Profit-wise! For FREE literature and more information, clip and mail the coupon TODAY!

POWER TRANSMISSION BY

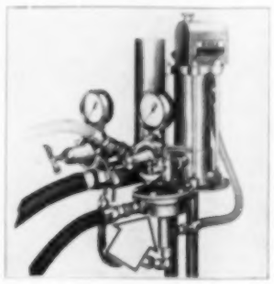
AMERICAN
PULLEY COMPANY

The American Pulley Company
4240 Wissahickon Ave.
Philadelphia 29, Pa.
Gentlemen:
Please send me the NEW American Wedgbelt Drives book. The name of my nearest American Distributor is:
Name
Firm Name
Address
City Zone State

If you write maker identify as IEN - 7807

PUMP . . Pneumatic, surge controlled to deliver fluid finishing materials

Source: BINKS MFG. CO.
3112 Carroll Ave., Chicago 12, Ill.



List is $35

Pressure in the atomizing air line to a paint spray gun is employed to operate a new surge control mechanism which the company has developed for use on its pneumatic reciprocating materials pump, previously described IEN 9E32-51. The control shuts off the pump instantaneously with any build-up in atomizing air pressure such as results when spraying action is stopped. Thus the pump cannot build pressure in the material hose that will create a surge when the spray gun is again opened. The control also releases any air in the pump cylinders so pressure cannot be built up by further pump action until normal operation is resumed.

The control can be applied on the company's pneumatic materials pumps now in service as well as forming a part of the standard equipment on new pumps. It makes it possible to spray materials that could not be handled previously by the pump due to tendency to separate. It prevents premature hose bursting and wire drawing in the spray gun passages. The new device is not suited to control the materials pump when it is employed in flow application of the materials.

If you write maker identify as IEN - 7808

ROCK DRILLING . . Carbide tipped drill with spiral leads for use in masonry

Source: NEW ENGLAND CARBIDE TOOL CO.
58-62 Brookline St., Cambridge 39, Mass.

Clog proof in green concrete

Thunder-Twist designates new design of the company's carbide-tipped masonry drill. It is characterized by its spiral grooves and by the added axial grooves which are suited particularly to drill holes in green concrete. Sizes range from 5/8 to 1¾ inches. Six lengths are 3 to 24 inches.

Identify as IEN - 7809

Railroad shop needed a source for cleaning and for pressure steam to operate a hammer and to develop draft for firing cold locomotives. It selected two Vapor-Clarkson assemblies with automatic control, the same as those employed on diesel locomotives to supply train-service steam. The shop estimates a saving of about $1,000 per month over the two old boilers that were replaced. A bulletin tells the whole story.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7810

"Custom" Features IN ECONOMICAL STANDARD STEEL LOCKERS

penco

Penco gives you a *choice* of 337 combinations of *standard* locker types, sizes and design variations—permitting maximum flexibility in locker room planning! Have your own "custom-type" installation at *standard* cost! Locker catalog No. L-100 shows how. Send for it now!

Penco Single Tier Lockers with slope tops and closed bases—boost employee morale, promote locker room cleanliness!

Founded 1869 by E. Lewis Sappenfield

PENN METAL
Corporation of Penna.
80 OREGON AVENUE, PHILADELPHIA 48, PA.

If you write maker identify as IEN - 7811

On any steel blackening problem

DEPEND on DU-LITE for a Superior Finish

Courtesy The Pyle Chuks Co.

Here's an example . . .

Du-Lite gave this part with its complicated knurls, slots, threads, etc. a fine rust-resistant durable black finish. It is typical of many other parts, small and large, which have been black oxidized by Du-Lite for many years. Moreover, Du-Lite meets most individual and government specifications including 57-0-2C for Type III Black Oxide finish.

What's YOUR problem?

Du-Lite installations are simple, compact, easy to operate. Du-Lite equipment can be tailored to fit production requirements on all types of jobs with a maximum of speed and economy. Du-Lite also makes a complete line of cleaners, strippers, wetting agents, passivating agents, rust preventatives, burnishing compounds, etc. for any metal finishing application.

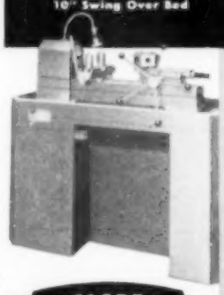
See your nearest Du-Lite Field Engineer or write for more information.

Du-Lite DU-LITE CHEMICAL CORP.
MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 7812

power for big cuts
accuracy for second operation work

THE NEW
GLOBE HAND-SCREW MACHINE
10" Swing Over Bed



Here's the hand-screw machine that combines the features of a production and a precision lathe!

EXTRA WEIGHT in bed, headstock and accessories insure close tolerance work; rigidity for heavy loads and chatter-free operation.

BIG 1-7/16" SPINDLE HOLE takes oversize work diameters. Chucks 1" bar stock in draw collets or 1⅛" work in nose collets.

HIGH SPEED BEARINGS: Tapered rollers insure spindle rigidity, high speeds, easy take-up.

INSTANT SPEED CHANGES with gear selector.

16 SPINDLE SPEEDS—from 184 to 3796 rpm.

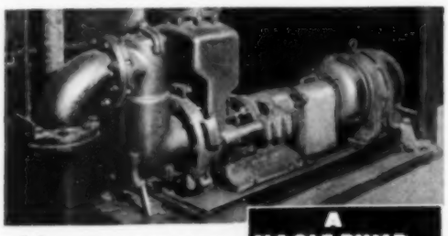
POWER—1 full horsepower, 2 speed motor, twin Vee belts to spindle.

LOW COST—priced in the economy range.

ASK FOR DETAILS!

★ GLOBE ★
HEAT-SEAL, INC.
MACHINE TOOL DIVISION
3376 S. Robertson Blvd.,
Los Angeles 34, Calif.

If you write maker identify as IEN - 7813



A NAGLE PUMP IS THE MAINTENANCE MAN'S BEST FRIEND

NAGLE Pumps are designed to eliminate shut-downs and maintenance. The 4" type "AW" self-priming pump shown, handling pickling solution at a Gary tin plate mill, features an easy-to-clean basket strainer, clamp-on quick-off end plate, readily accessible stuffing box, fast sleeve type slippage seal adjustment and split-bearing stand—top half lifts off. Pump can be rapidly dismantled. Water end parts of the corrosion resistant alloy best suited to your needs. No wonder more and more plants are standardizing on Nagles. A wide range of horizontal and vertical shaft pumps — ALL for corrosive and abrasive applications. Get the facts!

NAGLE PUMPS

NAGLE PUMPS, INC.
1241 CENTER AVENUE, CHICAGO HEIGHTS, ILLINOIS

PUMPS FOR ABRASIVE AND CORROSIVE APPLICATIONS

If you write maker identify as IEN-7814

Wilsonize

- to beat the clock on down-time
- to get better tube maintenance

Choked or clogged tubes lower the efficiency of your tubular apparatus . . . result in costly down-time. But with Wilson Tube Cleaners on the job, even the toughest deposits are thoroughly removed from tubes of boilers, heat exchangers, stills, evaporators, etc. Tubes are left spic-and-span, ready for more service. And best of all, Wilson Tube Cleaners do their work in a hurry . . . help you beat the clock on down-time.

You get equally efficient service from Wilson Tube Expanders. They make rolling of new tubes . . . re-rolling of old tubes . . . quick and easy. These precision-manufactured tube expanders insure solid seating. They are available in all sizes, flaring and non-flaring types.

TWO BULLETINS—48-page Catalog describing complete Wilson Tube Cleaner line and up-to-the-minute Tube Expander Catalog—are available. A single request brings both.

THOMAS C. WILSON, INC.
21-11 46th AVENUE, LONG ISLAND CITY 1, N. Y.
CABLE "TUBECLEAN" NEW YORK

WILSON

WILSON TUBE CLEANERS • WILSON TUBE EXPANDERS

If you write maker identify as IEN-7815

THERE'S NOTHING LIKE A

Clarke

You name the problem . . . Clarke has the answer. For every phase of floor maintenance there's a Clarke machine to deliver year after year of rugged, dependable service. For well-kept floors at lower cost there's nothing like a Clarke!

Write for Full Information

CLARKE SANDING MACHINE COMPANY
287 Clay Street Muskegon, Michigan

Sales Representatives and Service Branches in Principal Cities

Porter-Cable floor sanders and edgers are now manufactured and distributed by Clarke Sanding Machine Company. Sales and service of these machines is available through Clarke authorized sales representatives and service branches.

If you write maker identify as IEN-7817

CONSTRUCTION . . Bucket tooth in two parts for renewal when worn

Source: BLAW-KNOX CO.
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

Socket base for permanent attachment to a clamshell bucket and a renewable tip, that wedges itself into the socket, form the two parts of a new bucket tooth. The tip is reversible as well as renewable and can be replaced quickly. Bases and tips are available from stock with the bases drilled and ready for assembly. Application can be on existing buckets.

If you write maker identify as IEN-7818

TESTING . . Spray liquid forms bubbles to signal a gas leak

Source: CARGILLE SCIENTIFIC INC.
116-18 Liberty St., Room 903, New York 6, N. Y.

Bottle and liquid with quart refill lists at $3

Leak-Tee is a new liquid packaged in a 4-oz. plastic bottle equipped with a spray head. Squeezing the bottle delivers the liquid over a surface where a leak is suspected as on a pipe line or at a pipe fitting or a tank seam. If there is a leak, even a minute one, a cluster of live bubbles will gather and grow. Refill liquid is available in quarts and gallons at list prices of $2 and $6. The plastic bottles alone list at 75 cents each or $6 per dozen.

If you write maker identify as IEN-7819

CAPACITORS . . Dual rated ac.-dc., for application in electronic circuits

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Ask for Bulletin GEA-5777

Metal containers in oval drawn construction with double-rolled seams, to effect savings in materials such as tin, lead, aluminum and steel, are employed to enclose and hermetically seal this new capacitor. It is a fixed paper-dielectric design and is considerably smaller than the rectangular units it replaces. Three of the rectangular assemblies are shown at the rear of the illustration by way of comparison. Ratings are 600 to 1,500 volts dc., 230 to 600 volts ac., 2.0 to 10.0 mf.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7820

3-LB. ROTOR SCALER CLEANS WELDS FASTER

"PAID OFF" IN 25 DAYS

A FABRICATING shop reports the new Rotor S-1 Scaler cleans more welds per day because it is lighter, shorter, easier to get into hard-to-reach places. Savings paid off cost in 25 days. Weighs only 3 pounds; is 10 inches long. Safety retainer chisel allows long reach into corners—you don't have to hold chisel. For peening, rust and scale removal, star drilling, light chipping. Ask for Bul. 33.

THE ROTOR TOOL CO.
CLEVELAND, OHIO

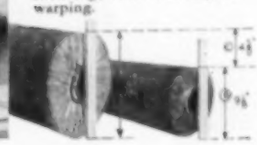
If you write maker identify as IEN-7821

5 times the Wear

A Fullergript fiber and wire mixture brush before use in floor sweeper.

B Same brush after 10 months service — 5 times as long as the ordinary brush lasts.

C Note that although brush has worn down $4\frac{3}{4}$", there is no evidence of material shedding, loose backing or warping.



Users of power-driven floor sweepers consistently emphasize the longer brush life, the improved sweeping efficiency and the saving of man-hours with Fullergript brushes! Write us for information.

FULLER BRUSH FULLERGRIPT (At home . . in business, too)

THE FULLER BRUSH COMPANY • INDUSTRIAL DIVISION
3583 MAIN STREET • HARTFORD 2, CONN.

If you write maker identify as IEN-7822

For lab melts, pilot plant and small production . . .

The PT POT TILTING Furnace

This Detroit Electric Furnace has been specially developed to produce small melts of any metal with ease, economy and speed. 15-pound capacity pot can be used as a crucible or tilted to pour directly into molds. Roof lifts and swings for easy loading. Complete with controls. Full information on request.

WRITE FOR DETAILS

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industriais "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelli Inc., 130 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F. EUROPE: ENGLAND, Birlec, Ltd., Birmingham.

If you write maker identify as IEN-7823

Pheoll STOVE BOLTS

HELP LOWER UNIT PRODUCTION COST TO MEET COMPETITION PROFITABLY

Save valuable assembly time by using Pheoll precision made stove bolts. They are made in round, flat and oven head styles for all types of fabricated metal assemblies and are available in either slotted or Phillips recessed head types. All bolt threads are rolled to conform to American Standards. Square or hexagon nuts are accurately tapped for rapid, easy fit. Pheoll stove bolts improve product appearance for there are no burred edges or unevenly shaped heads to detract from final assembly.

Slotted and Phillips recessed head stove bolts are carried in stock in a broad range of listed sizes and types. Brass stove bolts in round and flat head styles $\frac{3}{16}$" to $\frac{1}{2}$" diameters and up to 3" long are also available.

Other Pheoll Products
Tapping Screws
Thread Cutting Screws
Wood Screws
Stove, Chair and Ladder Bolts
Skins
Phillips Recessed Head Screws & Bolts

Pheoll MANUFACTURING COMPANY • 5700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS *Industrial Fasteners and Holding Devices*

If you write maker identify as IEN-7824

FAFNIR Ball Bearing
Power Transmission Units

THE FAFNIR BEARING COMPANY
NEW BRITAIN, CONN.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN-7825

NEW! **ISLAND PALLET DOLLIES**

HANDLE WITH EASE

cut Loading Time in half

TAKE over where fork trucks leave off . . . at the Truck or freightcar door. Island Pallet Dollies have staggered bottom rollers to eliminate trouble from floor racks. Built to handle your pallets. All parts are standard equipment. Write for Bulletin RTD-1A. Dept. IE7.

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

If you write maker identify as IEN-7826

ZIP OFF

with **AURAND** CLEANING TOOLS

AURAND rotary chipping action quicks, easily, thoroughly removes scale, paint, rust and other accumulations from any hard surface. Renewable cutter heads and foolproof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY SAVING FACTS
WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN-7827

TRUCK . . Spade attachment to handle a steel strapped carton

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Arrow indicates it

Spade-shaped lip acts as the load-handling element in a new attachment that applies on the company's standard ¾-ton fork-lift truck in place of the usual forks. The lip hooks under the steel-strapped top flap of a carton. A backing plate below the lip holds a carton in upright position while it is being lifted and carried by the truck as in the application illustrated.

The attachment is particularly suited for stacking in storage and for loading box cars. Two loaded cartons can be handled at one time by gripping beneath the flap of the lower one so the second carton is supported by it.

If you write maker identify as IEN-7828

HANDLING . . Tubular steel rack with hinged ends, can be stacked

Source: EQUIPMENT MFG. CO.
21548-52 Hoover Road, Detroit 5, Mich.

Sizes as specified

Square steel tube is employed in the construction of this new folding stock rack. It is available in the frame construction shown or in assembly with a solid floor. The frame ends hinge so they can be laid down flat on the base. The flat units stack one upon another for storage in a small space. Stacking also is possible when the ends are hinged into upright position where they lock in place. In this position the lugs on the bottoms of the feet engage the square openings in the tops of the end members.

identify as IEN-7829

New tape made of fabric and paper with built-in metal grips and a rubber-base adhesive makes up a new means, Naugatuck Chemical has developed, to join carpet without tacking or sewing. The tape is 4 inches in width. It is placed on the floor at the seam location. Adhesive is applied to it and one section of the carpet is laid over it. The second section is then gently "kicked" against the first one with a tool provided for this purpose. The needle-like grips in the tape penetrate the carpet backing and the job is complete.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7830

Built-In STAMINA

. . . ANOTHER REASON FOR THE "SUPER-LIFE" OF ATLAS CHAIN

The Atlas Nicarb Process used for case hardening bushings and pins is one big reason for the stamina of Atlas "Super-Life" Chain. Nicarbing provides an outer surface strongly bound to the core of the steel which provides greater strength and wear resistance. The link plates and roll-ers are also made of tough, heat-treated alloy steel.

Investigate today the chain that keeps on running after ordinary chain is out of service. Write ATLAS CHAIN and MANUFACTURING COMPANY, Kensington & Castor Avenues, Philadelphia 24, Penna.

"SUPER-LIFE"
ATLAS CHAIN

If you write maker identify as IEN-7831

Announcement by

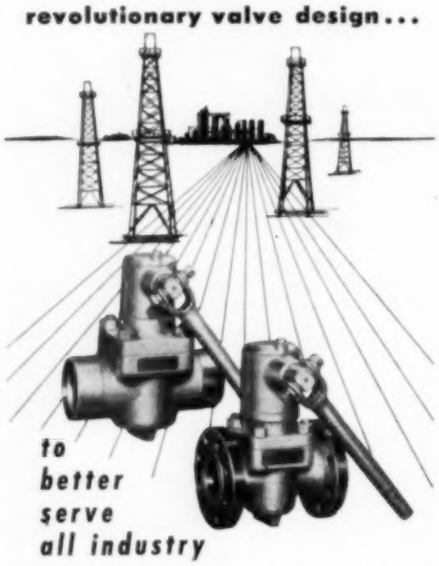
Bay State Abrasive Products Co.
Westboro, Massachusetts

Our latest pioneering development, "GRITCLOTH", is an open-mesh abrasive fabric for both mechanical or hand sanding operations. Tests show that it can be used wet or dry, flat or folded, and will outlast by many times the regular wet or dry abrasive papers now on the market. Watch for further details in the Bay State advertising.

BAY STATE

If you write maker identify as IEN-7832

from the oil fields—a revolutionary valve design . . .



to better serve all industry

The remarkable Cameron Non-Lubricated Lift Plug Valve combines all of the advantages of gate and plug valves without retaining the disadvantages of either type. In addition, the seat which is not attached to the valve body, being a separate member, utilizes pressure forces to improve the seal and eliminate the effects of body distortion; Non-Lubrication—easy operation and a tight seal are assured without the aid of grease, a particularly desirable feature in industries where cleanliness is essential; and an ingenious operating mechanism which, for the first time, makes practical use of the lift-turn-reseat operating principle.

Offered first for highly corrosive acid and extreme pressures in oil industry service, the Cameron Non-Lubricated Lift Plug Valve is now in heavy demand because of its low maintenance and fine performance in all industrial services.

Cameron Iron Works, Inc.
P. O. Box 1212 Houston, Texas
Export: 74 Trinity Place, New York, N. Y.
Represented in the sterling area by: British Oilfield Equipment Co., Ltd., Duke's Court, St. James's, London S.W.1, England.

Cameron NON-LUBRICATED LIFT-PLUG VALVES

If you write maker identify as IEN - 7834

from Attic fans to X-ray machines

timing devices for every purpose

MARK-TIME does the job

first where quality counts

In every industrial and appliance field Mark-Time timing devices are known for rugged, dependable operation with no sacrifice of accuracy.

Mark-Time timing devices are designed, engineered, and manufactured by a skilled team of engineers and craftsmen. They include spring operated bell timers, time switches, and combinations of both, designed to meet all specifications and requirements where audible bell signal or electrical circuit breaking is required at the end of a time cycle.

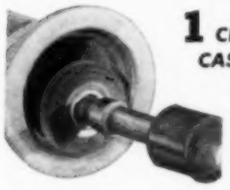
Let Mark-Time solve your timing problem!

M. H. RHODES, INC.
HARTFORD, CONNECTICUT

In Canada send inquiries to: Ontario Hughes Owens Co. Ottawa, Ontario

If you write maker identify as IEN - 7835

Pittsburgh Brushes Solved these Problems!



1 CLEANING RED-HOT CASTINGS in 30 seconds!

A Pittsburgh brush answered U. S. Pipe and Foundry's problem of cleaning red-hot castings. This rugged brush works 40 hours a week, turning out thoroughly cleaned castings at the rate of one every 30 seconds . . . a speed record for any brush cleaning operation of this type.

2 POLISHING 10,000 heating units!

When the Edwin L. Wiegand Company wanted to remove ragged edges from their *Chromalox* Heating Units economically and *fast*, they turned to rough, tough Pittsburgh Brushes for the answer. The 6" Pittsburgh steel wire brushes they installed polish 10,000 heating units during their life.

3 CLEANING WELDS in close quarters!

Allis-Chalmers' problem was to find a brush narrow enough to fit between cooling fins of transformer radiators, yet strong enough to remove slag and spall on welds which could conceal pressure-reducing pinholes. Pittsburgh engineers recommended an 8" rotary wire brush. Problem was solved!

Let Pittsburgh Engineers Solve Your Brush Problems.

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M-5, 3221 Frederick Ave., Baltimore 29, Maryland.

PITTSBURGH *Power Driven* BRUSHES

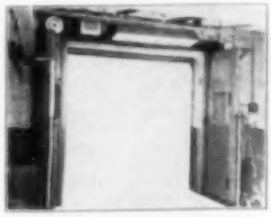
BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

If you write maker identify as IEN - 7837

DOOR . . Folding design, includes motor operation and remote control

Source: CLARK DOOR CO.
519 Hunterdon St., Newark 8, N. J.



Operates from either side

Recent improvement has been made in the special hardware employed in the assembly of the company's Bi-Fold door, previously described IEN-12588-45. As in the previous assembly the door is supplied in three sections ready for installation in a wall opening. The door leaves and jambs comprise two of the units. The head section with the operating equipment and the required electrical connections is the third. Jambs and header bolt into place to take the door leaves.

Connections are completed to a source for power and to the remote controls which can be photoelectric equipment, pushbutton, floor plate or pull switch. The operating mechanism includes a friction clutch to make the door inoperative in the event of closing or opening against an obstruction. Normal opening and closing interval is 3½ sec. in each direction.

Standard sizes in the line provide openings that measure 7 by 7 ft., 7 by 8 ft., 8 by 7 ft., and 8 by 8 feet. Pedestrian doors can be specified within the main doors. Current characteristics also are subject to specification.

If you write maker identify as IEN - 7838

VALVE . . Swing gate design with electric heating flange plates

Source: OKADEE CO.
330-34 S. Michigan Ave., Chicago 4, Ill.

No frost at minus 110 deg. F.

New assembly of the company's swing-gate valve includes flange plates that enclose electric heating elements. The arrangement permits use of the valves in lines such as those carrying liquid carbon dioxide where frosting is a problem and also in lines handling hot and cold and viscous liquids or gases that tend to congeal.

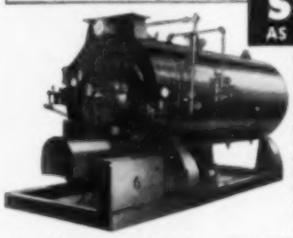
The single disc valve employs the heating element shown by the arrow toward the right in the illustration. A double-disc assembly is normally equipped with heated plates on both sides. Heat from these plates is transmitted directly to the valve seats and from there to the material being handled and to the operating parts.

The plates can be installed in the company's flange-type valves now in service. Valve sizes range from 2 to 6 in. with pneumatic, hydraulic, solenoid or hand-wheel control. The heating elements are available for operation on 110 or 220 volts with input ranging from 400 to 3,000 watts per unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7839

REGARDLESS OF SIZE CYCLOTHERM GIVES YOU . . . STEAM AS YOU NEED IT with CYCLONIC COMBUSTION!



If your steam requirements have a tendency to change at different times of the day, the most economical and efficient boiler you can install is a Cyclotherm Steam Generator.

Cyclotherm means *Quick Steam* when called for. This reduces fuel consumption during "coming up" periods and permits continuous, quick adjustment to load changes. The Cyclotherm Boiler is able to deliver steam faster because of its extremely high heat transfer and the fact that it has much greater water circulation since the combustion chamber is radiating heat evenly along its entire length.

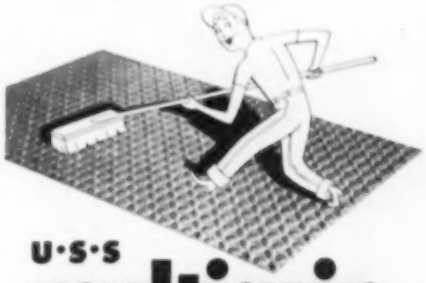
REMEMBER—Full power operation from a cold start in 15 to 20 minutes. Guaranteed 80% efficiency. Savings up to 50% on maintenance. Great fuel operational savings. Boilers are designed for oil or gas operations from 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

Write today for latest descriptive folder, "All Your Questions Are Answered by Cyclotherm."

CYCLOTHERM STEAM GENERATORS
DIVISION UNITED STATES RADIATOR CORP.
DEPARTMENT 29, OSWEGO, NEW YORK

If you write maker identify as IEN - 7840

There's not a spot on Multigrip
Where dirt and grease can hide;
Just grab the hose, a brush or mop
And swish it all aside!



U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast

UNITED STATES STEEL

If you write maker identify as IEN - 7841

CORD SETS
That Are Right On The Beam

● Cords, Ltd. engineers and builds standard and special cord sets for any application. Proved dependability.

Most comprehensive stock of moulds and dies in existence for production of electronic cords and assemblies.

When you bring your cord problems to us you get the experience of the vast Essex Wire organization, plus integrated production of every component from wire bar to finished assembly. Write for details, explaining application.

WIRE SX PRODUCTS

CORDS LTD.
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

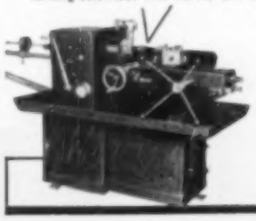
If you write maker identify as IEN - 7842

HEAVY CUTS

OSTER

No. 601 "RAPIDUCTION" the SIMPLIFIED LATHE

View shows this lathe removing a .007" chip on S.A.E. 1335 steel with a 3⅛" cut. Close-up of finished part is example of heavy forming cuts made with the No. 601 lathe. *It's EASY to operate!*



Capacity: 1½" round bar. Optional features include WORM drive or DIRECT drive: 2-speed or 4-speed motor; other optional features. Write for Bulletin No. 601.

THE OSTER MFG. CO.
2053 EAST 61st STREET
CLEVELAND 3, OHIO

If you write maker identify as IEN - 7843

MUELLER BRASS CO. ALLOYS FOR AVIATION'S TOUGHEST APPLICATIONS

803 • "803" metal is a high silicon iron copper bronze that is ideally suited for roller bearing cages and other specialty parts in jet aircraft. It is machinable and ductile. At temperatures up to 500° F., "803" is non-galling and retains its excellent mechanical properties.

"600" SERIES • "600" series bearing bronzes contain no nickel. They can be forged into relatively complicated shapes that require little or no machining. "600" series metals have a low coefficient of friction and a high tensile strength. They resist wear and corrosion, factors that make "600" series metals highly desirable for parts on hydraulic equipment, actuators and instruments in jet aircraft.

TUF-STUF • These aluminum bronze alloys are widely used for jet aircraft parts that really must stand up. TUF-STUF alloys are corrosion resistant, strong and light and long-wearing. They resist oxidation even at high temperatures. TUF-STUF alloys are available as forgings, rods and screw machine parts.

82 B

MUELLER BRASS CO. PORT HURON 27, MICHIGAN

If you write maker identify as IEN - 7844

HOW TO GET THE RIGHT PAINT FOR ONE-COAT COVERAGE

New, free book brings industrial painting facts up to date. We don't make paint. But to help you get full value from the paint you buy, we'll send you this fact-packed book on aluminum paints. Read it before you plan another paint job. It can save you time and dollars.

You may know that aluminum paint is best for many places in your plant, but do you know what *kind* of aluminum paint is best for each job? Some are specially formulated for painting metal and masonry, others for wood, others for heated surfaces. Mail the coupon for the free book that answers these and hundreds of other paint questions.

SEND FOR FREE BOOK

ALUMINUM COMPANY OF AMERICA,
Paint Service Bureau, 1786-G Gulf Bldg., Pittsburgh 19, Pennsylvania.

Please rush me free copy of "Painting with Aluminum."

Name (please print) _____
Address _____
City _____ State _____
We plan to paint the following _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.

ALCOA
ALBRON ®

If you write maker identify as IEN - 7846

MILLING . . Plain horizontal machine mounts 5¾ by 24-in. work table

Source: DIAMOND MACHINE TOOL CO.
3425 E. Olympic Blvd., Los Angeles 23, Calif.

For production

Model 22M is new design in the company's line of milling machines. It provides nine spindle speeds ranging from 85 to 1,500 rpm. in forward and reverse. It includes power feed for the table at 0.003, 0.005 and 0.008 in. per revolution. Longitudinal travel is 14 in. by power or 15 in. with a hand lever.

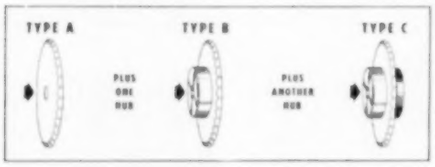
Vertical movement is through 15 in. and cross movement is maximum at 5½ inches. Maximum distance from the table top to the spindle center is 15 inches. The machine is driven by a 1-hp. ball-bearing motor with reversing control. Overall dimensions are 17 by 28 by 57 inches. Weight is 1,000 pounds.

Equipment, subject to specification, includes a vertical high-speed head, a 6-in. dividing head and tailstock, a production vise, collets, arbors, a rotary table, a multi-angle vise, a swivel-base vise, coolant equipment, splash tray, a lever-operated table. Chain drive can be specified for applications involving heavy pull with large cutters in hard materials.

If you write maker identify as IEN - 7847

DRIVE . . Roller chain sprocket, toothed plates and hubs from stock

Source: CULLMAN WHEEL CO.
1342-46 Altgeld St., Chicago 14, Ill.



To assemble your own

Semi-Stock designates new practice by the company in stocking steel hubs and toothed plates separately in a range of both plate and hub sizes for chain from ⅜ to 1¼-in. pitch. The arrangement provides for quick delivery to a user of a desired plate and hubs of required size for a particular job. The separate pieces also can be purchased for the user to carry in his own stock to assemble as the complete units are needed. Size data and prices are contained in a new "Semi-Stock" sprocket and roller chain bulletin.

Identify as IEN - 7848

Polymer nylon bushings in the core-box blow holes and nylon striker pads at spots of greatest wear in a mold cavity will keep aluminum foundry core boxes on the job. The nylon resists abrasive wear. The parts are machined from rod which the company is prepared to supply from stock.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7849

That favorable report comes from a prominent manufacturer who uses this Invincible to recover excess flux from submerged arc welding. The Invincible unit operates *automatically*, salvaging all unfused flux and returning it to the hopper of the welding head in a continuous flow . . . Invincibles salvage valuable flux, save costly man-hours and speed welding operations. Get the full story—write for—

FREE FOLDER on Welding Flux Recovery

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 7850

This "Sleeve" Guides Engine Valves

Aircraft engine valves need steady tappets. For guides to steer those tappets true, Pratt & Whitney called on Lycoming precision production.

Valve tappets require smooth-as-glass guides—"sleeves"—tailored to 5/10,000 of an inch for exact fit. For precision work like this, leading manufacturers in many fields depend on Lycoming production skill and resourcefulness.

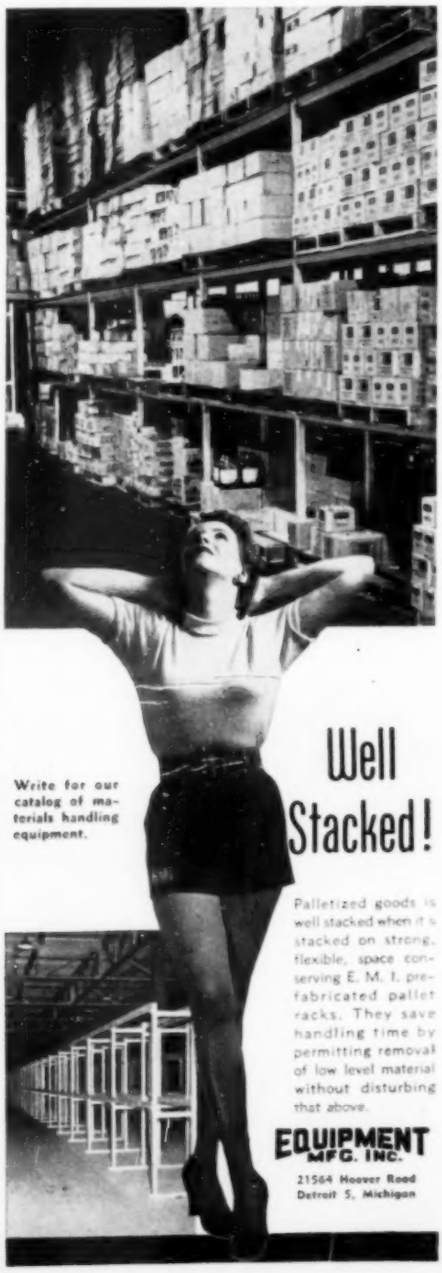
Whether you require such precision machining, or whether it's high-volume production, product development—or air-cooled power—look to Lycoming!

AIR-COOLED ENGINES FOR AIRCRAFT AND INDUSTRIAL USES, PRECISION AND VOLUME MACHINE PARTS, GRAY IRON CASTINGS, STEEL PLATE FABRICATION

LOOK TO **LYCOMING** FOR RESEARCH, FOR PRECISION PRODUCTION.

Lycoming-Spencer Division, Williamsport, Pa.
Bridgeport-Lycoming Division, Stratford, Conn.

If you write maker identify as IEN - 7851



Write for our catalog of materials handling equipment.

Well Stacked!

Palletized goods is well stacked when it is stacked on strong, flexible, space conserving E. M. I. prefabricated pallet racks. They save handling time by permitting removal of low level material without disturbing that above.

EQUIPMENT MFG. INC.
21564 Hoover Road
Detroit 5, Michigan

If you write maker identify as IEN - 7853

Even where clearances are small, oil seal replacements are no problem with easy-to-install split-type Clipper Seals.

All you do is: (1) Hook the self-adjusting garter spring around shaft. (2) Spread the seal at the split and slide it over shaft. (3) Slip the garter spring inside its groove in the seal and press assembly into cavity.

Precision molded Clipper Seals are made for sealing against oil, grease, water, air, grit and coolants . . . are available for shafts up to 66" in diameter. Write for Catalog PK-46A. Address: Johns-Manville, Box 60, New York 16, N. Y.

Johns-Manville CLIPPER SEALS

If you write maker identify as IEN - 7854

for 50 to 1 reduction on OZALID STREAMLINER developer drives . . .

WINSMITH SPEED REDUCERS

A copy in less than 30 seconds! Printing speed up to 14 ft. per minute! That's what this Ozalid Streamliner turns out for thousands of engineering, purchasing, personnel and accounting departments across the nation.

Because reproductions of letters, reports, drawings and records usually "can't wait", every component of Ozalid copying machines must be constantly relied upon to do its bit without failure. The Winsmith single reduction, 50:1 ratio, right angle drive, worm gear type reducer is a good example.

Serving the blower, developer and pump drive, which is powered by a 1/3 hp motor, this small, compact Winsmith unit is designed for the long-lasting service which Ozalid requires of all its components. Moreover, its vibrationless operation is necessary to the smooth, quiet performance for which the Streamliner is so well known. "We are pleased with the little servicing that these units have demanded over countless hours of usage", says Ozalid's chief engineer.

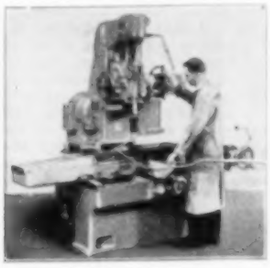
The importance that Ozalid, Division of General Aniline and Film Corporation, places on the selection of a speed reducer is typical of most industries . . . the very reason so many have become Winsmith users. Within the 1/100 to 85 hp range, no other speed reducer is available in so complete a selection of standardized types, sizes and ratings. *Catalog 148 will convince you.* Write!

WINSMITH, INC.
10 DAVIS STREET, SPRINGVILLE (Erie County), N. Y.

If you write maker identify as IEN - 7856

JIG BORING . . Precision machine electric gaging, ball bearing spindle

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



Details in Circular 550

Model 1E designates a new small design that has been added by the company to its line of precision jig-boring machines, previously described IEN-2860-51. The new machine is available with a 12 by 24-in. table having 18 in. of longitudinal travel or with a 12 by 42-in. table with 36 in. of travel. Transverse movement in either case is through 12 inches. Normal distance, table to spindle, is maximum at 20 inches. This can be increased to 24 or 26 in. by specifying a special machine column. Floor space in the two table sizes measures 66 by 78 in. and 106 by 78 inches.

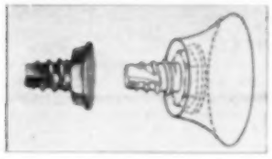
The spindle quill is hardened, ground and lapped and rides on 300 precision balls that are preloaded between the quill and the hardened spindle-head bore to provide a permanently accurate assembly. The quill has 5 in. of travel in the head. The head has 11 in. of adjustment on the column. Spindle center to column-ways measures 10 in. and to the column neck measures 13½ inches. Sixteen spindle speeds are between 65 and 2,800 rpm. Four spindle feeds are between 0.0006 and 0.006 in. per revolution.

Table settings can be made with accuracy to 0.0002 in. by means of the Electrolimit measuring equipment that is standard on the new machine. This equipment is installed for both longitudinal and transverse settings. It provides for basic 1-in. spacing, obtained electro-magnetically from a solid master bar, and fractional inches obtained by a precision micrometer screw with a 4½-in. barrel. Divisions measuring 0.0001 in. are read directly. Tenths are read on a vernier.

If you write maker identify as IEN - 7857

FASTENING . . Thread cutting screw molds into various rubber products

Source: SHAKEPROOF INC.
252 St. Charles Road, Elgin, Ill.



An "insert" item

Type 25 is a new design in the company's line of thread-cutting screws in which a pancake hexagon head is integral with the threaded shank. The screw has been designed to mold into rubber products such as the suction cup shown to the right in the illustration. This cup then can be secured to other products such as plastic trays, containers, housings for electronic equipment. The cup then becomes a mounting foot. The screw will cut its threads as it is turned into a drilled hole.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7858

Robinson pump installation at LaPointe-Plascomold

The LaPointe-Plascomold Corporation, producer of electronic components, installed a Robinson Metering Pump to increase production of their "Mighty Match" television divider networks. The pump not only reduced unit costs, but ejected "Plastisol so accurately that a change in design was made—affording a saving in material and still greater economies.

This versatile production tool may solve some of your problems. Write for further information today!

- Forcibly ejects fluid compounds—not a gravity dispenser
- Controls heat thermostatically
- Ejects fast — accurately
- Change discharge rapidly without tools
- Reduces unit costs—no skilled operator needed
- Adaptable to any production technique

*Registered Trade Name

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 47
95 PARK AVE. • NUTLEY 10, NEW JERSEY
Telephone NUtley 2-4510

If you write maker identify as IEN - 7859

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66b-J.

Reeves Pulley Company • Columbus, Ind.
REEVES *Variable Speed Control*

If you write maker identify as IEN - 7860

Fans . . Blowers FOR ALL INDUSTRY
"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 30".

6 Blade DYNAFLOW Unit

Also available in two and four blade types. Sizes, 10" to 36".

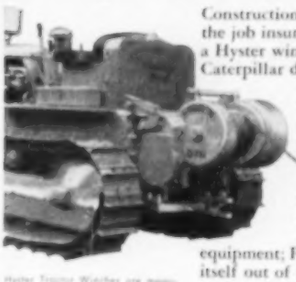
DUCTYPE BLOWER

Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 10" to 30".

SOUTH BEND AIR PRODUCTS, Inc. 321 N. SOLFAS AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 7861

HYSTER® Winches have *R-E-A-C-H and Pull Power* for any construction job...



Hyster Tractor Winches are manufactured for use with Caterpillar D8, 5P, D4, D2 and DW-10 tractors. Included are Towing Winches, Whole Drum Winches, Hy-Speed Winches, Oil Well Servicing Winches, two and three drum Tractor Mounted Hoists.

Construction men all know the job insurance provided by a Hyster winch mounted on a Caterpillar diesel tractor. The winch MOVES heavy equipment; RESCUES mud-bogged equipment; INSURES against work stoppage or down-time on any project using equipment; PULLS the tractor itself out of mud or other situations that have immobilized the unit.

Hyster winches and other tractor tools are sold and serviced at more than 700 Caterpillar dealer stores around the world. Consult your dealer. Write for literature.

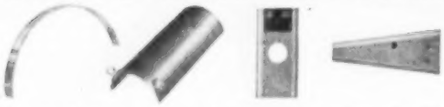
HYSTER COMPANY
2916 N. E. CLACKAMAS, PORTLAND 8, OREGON
1816 NORTH ADAMS STREET, PEORIA 1, ILLINOIS

If you write maker identify as IEN - 7862

If you write maker identify as IEN - 7863

Let WATLOW make things HOT FOR YOU!

WATLOW Electric STRIP HEATERS



For simple warm-up — or sustained high heat—there's a Watlow Strip Unit of the size, shape, voltage or wattage "tailored" to your specific needs.

Custom Designed Heat Units
If you have a special heat problem, send us a blueprint or pencil sketch of your job. Our engineering dept. will send you prompt recommendations and quotations, without obligation.

FREE CATALOG of strip, band, cartridge, immersion heaters.

WATLOW ELECTRIC MFG. CO.
Since 1922—Designers and Manufacturers of Electric Heating Units
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

If you write maker identify as IEN - 7864

Eliminate Pipe Corrosion Problems with Easy-to-Install CLOW (THREADED)* CAST IRON PIPE

on the job with ordinary tools of the piping trade

WHETHER YOU ARE BUILDING, EXPANDING or replacing, consider the experience of leading architects and plumbing contractors... CLOW *threaded** CAST IRON PIPE is now their choice for all 3" and larger downspouts, waste and vent lines. They know that its corrosion-resisting qualities and long-life durability assure permanent, trouble-free service.

CLOW *threaded** cast iron pipe can be cut and threaded with ordinary tools of the trade... Available with plain or threaded ends. 18' lengths, sizes 3, 4, 5, 6, 8 and 10"...also with integral calking hub (other end plain) in 18' lengths and in sizes 4, 6 and 8".

Write for Form 4-26-50 to: JAMES B. CLOW & SONS, 201-299 North Talman Avenue, Chicago 80, Illinois.

*Has the same outside diameter as steel or G. W. I. pipe

JAMES B. CLOW & SONS
Wholesale Distributors of Pipe, Valves and Fittings for Industrial Use

If you write maker identify as IEN - 7865

BEARING . . Roller design employs steel roller guide cage

Source: ROLLER BEARING CO.
22 Whitehead Road, Trenton 3, N. J.

Ask for Bulletin SF-66

A steel outer race with integral end flanges, a set of rollers, a one-piece tubular steel cage and an optional inner race make up this new Pitchlign roller bearing. The trade name is based on the fact that the cage makes contact with the rollers at their pitch line to eliminate the possibility of skewing without creating any tendency to lift the rollers.

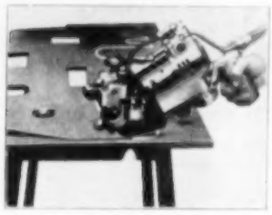
The cage is guided by the outer-race flanges within which it rides. The inner shoulders of these flanges hold the rollers laterally so no end thrust is transmitted to the cage. Retaining lips are formed in the cage slots so the rollers will not drop out when the bearing is removed from a shaft or from its inner race.

Sizes range from 0.7500 to 9.2500 in shaft diameter with corresponding outside bearing diameter at 1.2500 to 11.1250 inches. Overall bearing length ranges from 0.750 to 3.000 in. in the design that does not include an inner race. When the inner race is included the inside diameter of this race ranges from 0.5000 to 8.0000 inches. Load rating at 100 rpm. ranges from 2,515 to 52,100 pounds.

If you write maker identify as IEN - 7866

CUTTING . . Acetylene torch machine rides the work, is operator guided

Source: AMERICAN PULLMAX CO.
2453-57 N. Sheffield Ave., Chicago 14, Ill.



To carry to a stock pile

Cadet trade names a new oxygen-acetylene machine. It combines a motor-driven housing with an adjustable torch head that can be set square or at a desired angle with the travel wheels. The assembly weighs 19 pounds. It has capacity to cut steel $\frac{1}{16}$ to $2\frac{1}{4}$ in. in thickness.

The operator guides the movement after having set the controls for a desired operating speed. He can cut circles to a minimum radius of 1 in. and follow an irregular outline.

Identify as IEN - 7867

Any valves to oil and inspect? Just call Desco Service if you are in the Shreveport, Louisiana district. This truck-mounted outfit operates on a contract basis. It comes to your valves at agreed intervals. Its expert mechanics inspect, lubricate, tag valves that need repair. Its trucks are equipped with equipment and lubricants to do an efficient job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7868

SERVIT

Number one choice among split bolt connectors, the efficient Burndy Servit is available for splicing, tapping, or dead ending any combination of copper, steel, or aluminum conductors.

Ask your Burndy Distributor

BURNDY
NORWALK · CONNECTICUT

If you write maker identify as IEN - 7869

AA-291

Camachine®

SLITTERS AND ROLL WINDERS

If you want fast, low cost production of top-quality rolls of paper, plastics, textiles, rubber, and other plain, coated, laminated or tacky-surfaced materials . . . it will pay you to investigate Camachines!

Bulletin 1010 will be sent on request

26-3A, a popular CAMACHINE featuring differential rewinding and positive roll separation. Rolls produced on the 26-3A are ideal for further processing, or for consumer use.

Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

If you write maker identify as IEN - 7870

YOU NEED ONLY THIS SIZE SPACE FOR STERLING INDICATING METERS

40% SMALLER THAN FORMER MODELS

Typical of Sterling's ability to produce just the right meter for your needs at moderate cost is this new small unit for A-C or D-C service. Available in ranges of 1 to 50 V, 1 to 30 amp, and 10 to 1,000 milliamperes—with high readability and accuracy. In dull, black, wrinkle or nickle finishes. Write today for complete facts.

Send for a Sterling catalog today — a complete line of meters for the electronic and automotive field.

STERLING MANUFACTURING COMPANY
9202 DETROIT AVE.
CLEVELAND, OHIO

If you write maker identify as IEN-7872

"Tops them all" and SAVES 90% OF COSTS WITH RAYTHEON WELDPOWER

Attaching small steel balls to these special gage shanks presented a problem — until the Barden Corporation of Danbury, Conn. applied a Raytheon WELDPOWER Unit to this delicate job. Now steel balls, ranging in size from 1/16" to 1/4" in diameter, are quickly, cleanly and accurately welded — yet easily removed when necessary without damage to the shanks. The 90% savings per year equals the cost of the Unit itself, proof that WELDPOWER pays its way over and over in time saved, better production and fewer rejects.

Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals with Raytheon Condenser Weldpower Control Units. Available in 5 sizes with appropriate Weldpower Heads.

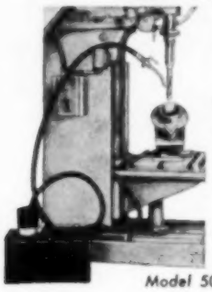
Send sample parts or write for details to Dept. 6470, IN-7

RAYTHEON

RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION: 17 VESTRY STREET, NEW YORK CITY

If you write maker identify as IEN-7873

BRADY *coolant pumps*



WILL SAVE YOU MONEY!

only $64.50 f.o.b. factory

Model 500 ST

For Permanent or Temporary Use

Here's one of our most popular ball bearing pump and tank units...portable—up to 500 GPH—with 5 gal. steel tank. Complete with hoses, nozzle, and electrical cord with plug.

Write for catalog on our complete line

316BC

Brady CORPORATION

1003 East 18th Street Muncie, Indiana

If you write maker identify as IEN-7874

Spray THIS aluminum *without spatter!*

Background surfaces are not spattered or marred when you spray with ROYLAC ALUMINUM

Due to special vehicle and solvents, this protective coating dries in motion to a cottony, non-adherent powder at about four feet from the spray gun.

But the surface you WANT to protect receives a superior, corrosion-resistant and tightly bonded film, with a bright aluminum finish, particularly effective exposed to acid-type fumes, salt or moist air.

Roylac Aluminum is plasticized to provide a film of good flexibility and bonding tack, effective for sealing porous surfaces. With its non-reactive vehicle, Roylac is excellent on galvanizing, steel and other basic metals. It is accepted as an economical, fast-drying product finish coat. It covers up to 800 square feet per gallon and dries to a tack-free film in 12 minutes. Also easily applied by brush.

Photo made the day after spray-coating with Roylac Aluminum. Note absence of spray on grass.

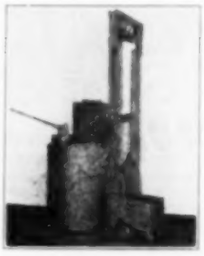
Free test sample, specifications and prices on letterhead request.

ROYSTON LABORATORIES, INC.
P. O. Box 112, Blawnox, Pa.

If you write maker identify as IEN-7875

ELEVATOR . . Skip hoist design lifts and dumps metal to melt

Source: C. M. KEMP MFG. CO.
403-7 E. Oliver St., Baltimore 2, Md.



For your loading work

Metal Loader designates new assembly of skip-hoist elevating equipment and a wheel-equipped dump truck with which scrap and virgin metal can be collected, raised and dumped into a melting pot. The equipment was initially designed to handle type metal into the company's design of melting pot. It also can be employed to collect and handle other loose materials.

The truck measures 15 by 29 in. and has 2.6 cu. ft. capacity or approximately 500 lb. of material. It rides on two rubber-tired wheels and two casters. It includes a pair of guide rollers that enter into and ride in the elevator track. Its pivoted handle extends upward to engage a hook frame that takes the lifting load. Hoist speed is 12 fpm. The hoist motor rates ½ hp. and operates on 220-volt three-phase 60-cycle ac.

The guide wheels operate inside the I-beam frame while the main truck wheels travel on the outside holding the truck level until the guide rolls are diverted into horizontal runs to provide the dumping action. When the materials have been delivered from the truck the hoist is reversed to bring the truck back to level position and lower it to the floor.

If you write maker identify as IEN-7876

CLEANING . . Steam spray machine delivers hot solvent, is oil fired

Source: TOPPER EQUIPMENT CO.
36 Main St., Matawan, N. J.

Circo is the trade name

The company announces take-over of manufacture and sale of the steam-spray machine previously described IEN-12367-50. It is prepared to supply the machine in stationary or portable design for general maintenance cleaning. Steam, hot water, hot solvent can be delivered interchangeably through the adjustable nozzle mounted at the end of a hose that is part of the assembly.

Included in the housing is a 120-gal. tank into which dry powdered cleaning material is delivered. The machine mixes this material with the water in the tank and holds the solution ready for delivery into the steam line depending upon the setting made by the operator.

The oil burner will operate on kerosene, fuel oil, light diesel oil. It has capacity to raise the pressure to the operating point from a cold start in about 90 seconds. Safeguards are provided to protect both the equipment and the operator.

Attachments are available to handle special cleaning compounds such as paint strippers when it is not desirable to charge the compound into the tank. A ½-hp. motor with factory-lubricated sealed bearings requires no attention in service. It drives the solution pump.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7877

PROTECT *your expensive dies and machine parts*

USE ACME RED OR BLUE LABEL PRECISION DOWEL PINS

Acme Dowel Pins break before bending or mushrooming—thus saving expensive equipment from ruin through misalignment. Order standard sizes from stock. Attractive prices on special sizes and large quantities.

WRITE FOR DESCRIPTIVE CIRCULAR

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. Leflin Street • Chicago 7, Illinois
THE SERVICE GROW TO INDUSTRY FOR MORE THAN 25 YEARS

If you write maker identify as IEN-7878

MULTIPRESS®

Lower Production Costs

Higher Production Quality

Safer, Easier Tool Operation

Multipress is a cost-cutting production tool proved by nearly seven thousand applications in its first eight years. Its smooth, oil-hydraulic *precision control* gives you high-speed accuracy . . . permits fast tool changes . . . brings quieter, safer, more uniform operation. Rugged and compact, it stands up under long, hard use. Manual and automatic controls for almost any ram action or operating sequence. Index Tables for automatic rotary feed, and many other Multipress accessories available. Bench-size and floor models, in 1-ton to 50-ton capacities. Send for data sheets on Multipress as applied to bending, broaching, blanking, crimping, assembling, drawing, forming, punching, slotting, riveting or other specific needs. Write today!

The DENISON Engineering Co.
1160 Dublin Road, Columbus 16, Ohio

DENISON HydrOil ics

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Delpark COOLANT FILTERS

FOR GREATER GRINDING EFFICIENCY

Grinding problems can be minimized and production increased with Delpark Full-Flowing, Self Cleaning Coolant Filters. Complete and continuous filtration of soluble oils and cutting oils removes heat-bearing solids as coolant comes from the work. Assures more uniform limits, better finish, and greater accuracy with a clean wheel and lower coolant temperature. Fully automatic, no down time for cleaning reservoir, extends coolant life. Two to several hundred gallons per minute capacities.

- Less wheel dressing
- Longer wheel life
- Uniform coolant temperature
- Lowers rejections
- More accurate gauging

Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

Write for more complete information

INDUSTRIAL FILTRATION COMPANY
5110 Industrial Avenue • Lebanon, Indiana

If you write maker identify as IEN-7880

TAPER-LOCK BUSHINGS WITH WELD-ON HUBS

NOTHING ELSE LIKE IT!

FOR your sprockets, gears, clutches, motors, impellors — for wheels of all kinds where service conditions are *really rugged*—there is nothing like TAPER-LOCK. This famous patented bushing—supplied for your use with matching TAPER-LOCK Weld-on Hub — gives you an easy-mounting, true-running unit that locks to the shaft with firmness equivalent to a shrunk-on fit. *WRITE* for special bulletin A-420A with specifications and entire range of shaft sizes (1/2" to 10").

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN-7881

Light Where Light is Needed MOST

FOSTORIA LOCALITES

Help Your Workers See Better

Lights the Vital Seeing Zone

Machine Tools, Inspection and Assembly Benches

MODEL 3470-P-172 Overall length 48½". Three instantly adjustable joints. Circular base for machine or wood screw mounting.

$7.16 EACH in pkg. of 6. Single Units $8.95 ea.

- Rugged Construction withstands vibration and rough handling
- Instantly Adjustable with flexible ball and socket joints
- Baked Enamel Finish—Exterior, Smooth Gray—Reflective Interior, high temperature White
- Reflector accommodates 100 watt or any A-19 or A-21 medium screw base lamp
- Wired-Complete with switch socket and 8 ft. oil-resistant cord and moulded plug

Write for Complete Catalog of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION FOSTORIA, OHIO

Localites are available through electrical wholesalers everywhere.

LOCALITE fostoria for Light On the Job

If you write maker identify as IEN-7882

JOY WG-9 "Industrial-Air" COMPRESSOR

Saves space—gives you top efficiency—built for heavy duty

- Full force-feed lubrication of all working parts
- Replaceable cylinder liners and crosshead guides
- Small floor area and simple foundation requirements
- Anti-friction main bearings

15 Sizes—172 to 881 CFM
20 to 150 psi
FREE BULLETIN

For complete details, write for new Bulletin A-45, or...

Consult a Joy Engineer

WAD 12088

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building, Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO

If you write maker identify as IEN-7883

NEW THREAD COMPOUND

Licks Stud Freezing Even at 1800°F.!

SAFE for all high temperature applications!

SAFE for Stainless and Alloy Steels, too, will not pit or corrode!

IDEAL as a cutting compound to prevent galling of Stainless Steel!

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

FREE TEST SAMPLE! Send for YOURS TODAY

FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1523 CARROLL AVENUE • CHICAGO 7, ILLINOIS

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

ADHESIVES . . Emulsion-type synthetic-resin materials; properties, reasons for their use, application methods, industrial use chart. Bulletin 23, 12 pages. Paisley Products, Inc., 1772 Canalport Ave., Chicago 16, Ill. **IEN-0739**

AIR CONDITIONING . . Coolers and conditioners for crane cabs; specifications on a range of models, suggestions on mounting, dimension drawings. Bulletin 1301, 24 pages. Dravo Corp., 352 Neville Island, Pittsburgh 25, Pa. **IEN-0740**

BEARINGS . . Impregnated-wood units for conveyor-screw and roll mounting; suggested types and sizes, installation, speeds. Catalog 210, 20 pages. Arguto Oilless Bearing Co., 99 W. Berkley St., Philadelphia 44, Pa. **IEN-0741**

BEARINGS . . General-purpose bronze bearings in some 850 stock sizes; general description, grooving, notes on stock points and distributors. "24 Hours," 4 pages. Johnson Bronze Co., 601-5 S. Mill St., New Castle, Pa. **IEN-0742**

CAPACITORS . . For power-factor correction; standard types and ratings, indoor and outdoor, notes on use. Catalog 27, Sections 1 to 4, 6 to 10 pages each. John E. Fast & Co., 3155 N. Pulaski Road, Chicago 41, Ill. **IEN-0743**

CAPACITORS . . Small variable units for electronic equipment; dimensioned drawings and ratings on standard units. "1952 Capacitor Catalog," 12 pages. Hammarlund Mfg. Co., 460 W. 34th St., 10th Floor, New York 1, N. Y. **IEN-0744**

CHAIN . . Bead chain in standard and special types; design suggestions, sizes, metals, fittings, assemblies, applications. 1952 Catalog, 12 pages. Bead Chain Mfg. Co., 108-12 Mountain Grove St., Bridgeport 5, Conn. **IEN-0745**

CLEANING . . Cabinet-type abrasive-blast machines for small lots and hand manipulation; sectional views, details. Catalog 31-A, 12 pages. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Mishawaka, Ind. **IEN-0746**

CLEANING . . Materials for metal cleaning; summary chart and application notes on alkaline, emulsion, acid phosphate, other types. "Metal Cleaners," 6 pages. E. F. Houghton & Co., 301-5 W. Lehigh Ave., Philadelphia 33, Pa. **IEN-0747**

CLEANING . . Materials for metal products; selection chart, condensed descriptions on cleaners, deflocculators, strippers, phosphatizers. Bulletin 121, 6 pages. Kelite Products, Inc., 1248-52 N. Main St., Los Angeles 12, Calif. **IEN-0748**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7884

Are You Making Full Use of RUBBER PRODUCTS Like These?

Then Find Out About Our Specialty—VOLUME PRODUCTION OF . . .

Rubber Convoluted Boots, Accordion-type Seals, Boots and Sleeves for Machinery, Bellows, Tubing, Covers, Sacs, Grommets, Caps and Bulbs!

Write Today for FREE Brochure

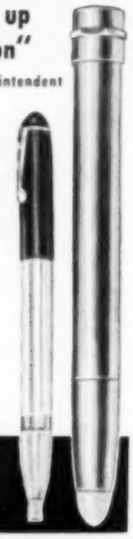
which will show you how others have solved design and production problems with Dipped Rubber Parts—Complete with Pictures and Prints!

Midwest Rubber COMPANY
17228 Conant Road, Detroit 12, Michigan

If you write maker identify as IEN-7885

"Marking Parts in COLOR has speeded up our Production"

—writes a Plant Superintendent



And that's where the Flo-master Felt Tip Marker comes in. The complete range of colored Flo-master Inks permits detailed and accurate identification for assembling, stocking, inspecting. And the Flo-master Felt Tip just glides over any surface—metal, wood, plastic, etc. with fine lines or BIG BOLD lines.

Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—are recommended for dark, hard-to-mark surfaces using the KING SIZE Flo-master. For light colored surfaces use Transparent Inks with POCKET SIZE Flo-master.

This versatile marker is also ideal for marking shipping cartons, boxes, making posters, graphs, sketches.

Contact your supplier or write direct to Cushman & Denison Mfg. Co., Dept. V2, 155 W. 23rd St., N.Y. 11.

Flo-master FELT-TIP MARKER

If you write maker identify as IEN-7886

for platform trucks and trailers

CESCO Automatic COUPLERS

COUNTER BALANCED

THEY COUPLE AT ANY TRUCK ANGLE because the counter-balanced bail is always in coupling position; is easily disengaged by foot-operated latch. The spring-loaded jaw and counterbalanced bail provide complete flexibility for single trucks or truck trains.

Cesco Automatic Couplers may be welded or bolted to truck frames; are interchangeable with other makes. Write for information and prices.

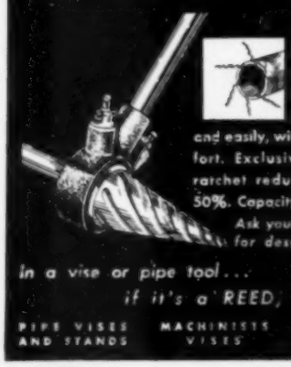
Colson Equipment & Supply Company
1317 WILLOW STREET • LOS ANGELES, CALIFORNIA

If you write maker identify as IEN-7887

REED TRADEMARK

SELF FEEDING RATCHET REAMER

Saves Time, Money and Effort



Spiral flutes with patented cutting edges cut burr cleanly, quickly and easily, with no pushing effort. Exclusive double-pawl ratchet reduces lost motion 50%. Capacity ¼" to 2".

Ask your Jobber or Write for descriptive circular

In a vise or pipe tool . . .
if it's a REED, it's RIGHT

PIPE VISES AND STANDS · MACHINISTS VISES · THREADERS CUTTERS

REED MANUFACTURING COMPANY
ERIE, PENNSYLVANIA, U. S. A.

If you write maker identify as **IEN-7888**

A Versatile Lock Nut!

ADJUSTING TYPE PALNUT TRADE MARK **LOCK NUTS**

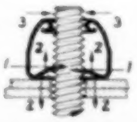
used as an adjusting nut —stays put anywhere on the screw

Holds any desired setting or position on screw thread. Locking force 3 (see cross-section) holds PALNUT in position with 6 powerful spring jaws which grip the outside of the screw.

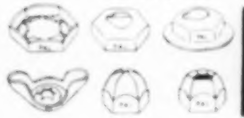
used as a load-carrying nut —offers triple locking action

Provides vibration-proof assembly of light parts, without lockwashers. Three locking forces assure tightness (see cross-section). Has pleasing appearance of cap or acorn finishing nuts. Low in cost, easily applied.

Used either way, you obtain PALNUT security, with low cost, light weight, speedy assembly. Send details of application for free samples and information.

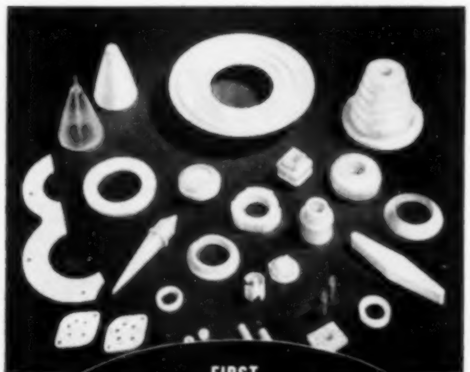


The PALNUT Co., 59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ontario



PALNUT TRADE MARK **LOCK NUTS**
for quick, secure fastening at low cost

If you write maker identify as **IEN-7889**



FIRST IN FABRICATING "KNOW-HOW"
TEFLON*----KEL-F†
And the Most Modern Facilities for Rapid, Low-Cost, Close-Tolerance Production

The United States Gasket Company began fabricating TEFLON, years ago when it was first offered commercially, and has pioneered its application to countless purposes throughout industry. You profit from this unusual experience and "Know-How," when you specify "TEFLON or KEL-F" fabricated by the United States Gasket Co.

You can be sure of uniform high quality, accuracy of dimensions, prompt attention to your requirements whether on stock (the most complete line in the country), or on custom machined or molded parts.

Get the advantages of these fluorocarbon plastics—fabricated by U.S.G. The finest dielectrics especially for high frequency service, chemically inert, non-contaminating, non-gassing, zero water absorption, unaffected by humidity, tough, resilient, serviceable from −110°F. to 500°F. without change in critical electrical or physical characteristics. Write for Bulletin No. 300.

*duPont's trademark for its tetrafluoroethylene resin
† Trademark, M. W. Kellogg Co.

UNITED STATES GASKET COMPANY | FLUOROCARBON PRODUCTS DIVISION
FABRICATORS OF "TEFLON", "KEL-F" AND OTHER FLUOROCARBON PLASTICS
CAMDEN 1, NEW JERSEY

NEW LITERATURE—*Continued*

CONNECTORS . . Crimp-type terminals for No. 6 to 4/0 wire sizes; types, hand and power applicators, selection data. "Power Terminals," 20 pages. Aircraft-Marine Products, Inc., 2102 Paxton St., Harrisburg, Pa. **IEN-0749**

CONNECTORS . . Compact electrical units; detail construction description, sectional drawings, AN sizes, dimensions, tests. "Connector Catalog," 8 pages. Titeflex Inc., 503 Frelinghuysen Ave., Newark 5, N. J. **IEN-0750**

CONTROLS . . "Autocon Alternator" control to change starting sequence of pumps, compressors, burners; operating schematics, description. Bulletin 7100, 4 pages. Automatic Control Co., 1003-7 University Ave., St. Paul 4, Minn. **IEN-0751**

CONTROLS . . Photoelectric controls for production operations; condensed data on light sources, phototube units, relays. Bulletin, 4 pages. De-Tec-Tronic Laboratories, Inc., 1709-13 Terra Cotta Place, Chicago 14, Ill. **IEN-0752**

CONTROLS . . Model 40 pneumatic process-control instrument; details on eight basic types, application schematics, types of control action. Bulletin 461, 32 pages. Foxboro Co., 42 Neponset Ave., Foxboro, Mass. **IEN-0753**

CONTROLS . . Pneumatic instruments to control pH of paper stock; details on components, application schematic diagrams. Bulletin ND4-96-700D, 12 pages. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa. **IEN-0754**

CONTROLS . . "Tel-O-Set" miniature pneumatic indicating receiver with manual loading and remote index setting; schematic hookup. Sheet 770, 4 pages. Minneapolis-Honeywell Regulator Co., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-0755**

CONVEYING . . Four types of pneumatic conveyors for dry pulverized, crushed or granular material; descriptions, application schematics, accessories. Bulletin G-1, 8 pages. Fuller Co., 1952 Fuller Bldg., Catasauqua, Pa. **IEN-0756**

CONVEYING . . And handling equipment for milling and processing plants; data on available types of conveyors, unloaders, screens, drives. Book 2392, 16 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-0757**

CORROSION PROOFING . . Plastic-base materials for metal, masonry, wood; condensed data summaries on eight types, notes on use. Catalog, 4 pages. Prufcoat Laboratories, Inc., 61-65 Main St., Cambridge 42, Mass. **IEN-0758**

CRANES . . Crawler-type unit on a ¾-yd. shovel chassis; load-radius chart, table of clearances, illustrated construction. Catalog 700-G-21, 8 pages. American Hoist & Derrick Co., 61 S. Robert St., St. Paul 1, Minn. **IEN-0759**

CUTTING . . Small cutting tools including step drills, reamers, broaches, taps and dies to 300 threads per inch; descriptions, materials. Catalog 20, 9 sheets. Woodruff & Stokes, 347-51 Lincoln St., Hingham, Mass. **IEN-0760**

DRILLING . . "Canedy-Otto" drilling machine, 1-in. capacity; specifications, cut-away detail on spindle drive, adjustment. Catalog D-110, 4 pages. Cincinnati Lathe & Tool Co., 3205-9 Disney St., Cincinnati 9, Ohio **IEN-0761**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as **IEN-7891**

CLARK Type "CY"

AC MAGNETIC MOTOR STARTERS
now available in
WATERTIGHT ENCLOSURES

The sensational new CLARK Type "CY" motor starters are offered in a wide variety of types and enclosures for use in such industrial atmospheres as hazardous gas, dust or excessive humidity. Illustrated above, is the NEMA Type 4 Watertight Enclosures, for sizes 0, 1, 2, and 3.

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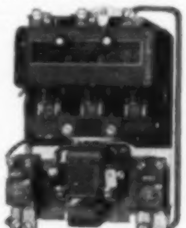

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● Recently an Eastern rubber processor replaced his 300-foot conveyor with a Cyclone Belt—only 70 feet in length! The wide-open areas of the Cyclone Belt allow the infra-red rays in the drying oven to come into more complete contact with the product's surface for faster, more uniform drying.

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U·S·S CYCLONE METAL CONVEYOR BELTS

CYCLONE FENCE DEPT., AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL COMPANY
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

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DON'T be misled by extravagant claims for under-powered hobby-type tools. Manufacturers who want top performance use Dumore Flexible Shaft Tools.

These powerful, high-speed tools slash costs of light grinding, burring, filing, sanding, lapping, chamfering . . . on ferrous and nonferrous metals, wood, plastics and ceramics.

No matter what your job requirement or your shop budget, Dumore has the right flexible shaft tool for you.

Choose from a complete range of 3 sizes

DUO-FLEX — 1/15 hp	POWER-FLEX	UNI-FLEX
lo-speed, 500-3,500 RPM hi-speed, 3,000-15,000 RPM	¼ hp — 20,000 RPM	1/15 hp — 15,000 RPM

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Ask your nearby industrial distributor for a demonstration or write . . .

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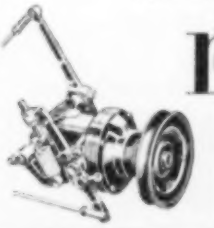

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ONE GOVERNOR
ONE MODEL . . .
for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

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● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

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...via Graybar

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A bird caused a complete blackout in the western half of Waukegan and Gurnee today. It used a piece of wire in building a nest in a circuit breaker on a transformer bank.

Homes in the area, St. Therese Hospital, Lake County Tuberculosis Sanitarium and radio station WKRS were without lights and power for 42 minutes.

A flashlight used in the room at St. Hospital happened

how badly they needed a Fairbanks-Morse Generating Set!

Why gamble with power failure? Install a Fairbanks-Morse Generating Set. It provides peace of mind, and protects the lives and welfare of persons on your premises. Fairbanks-Morse offers generating sets to meet every requirement. See your local Fairbanks-Morse dealer today or write Fairbanks, Morse & Co., Chicago 5, Ill.

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a name worth remembering

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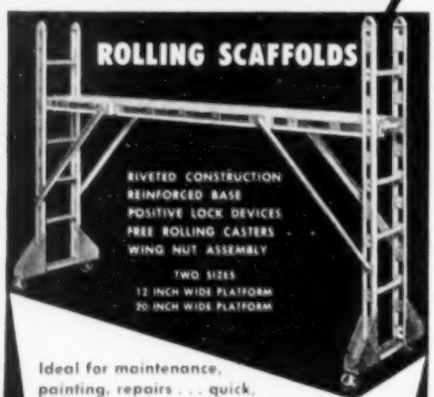
ROLLING SCAFFOLDS



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NEW LITERATURE—Continued

DRILLING . . Universal and horizontal drilling and tapping machines, 2½ to 4-in. spindles; positioning ability, construction points, specifications. Catalog, 12 pages. Kaukauna Machine Corp., 1948 Thomas St., Kaukauna, Wis. IEN-0762

DRIVES . . Hydraulic couplings in belt-driven and hub-mounted designs, 1½ to 70 hp.; cut-away views, operating principle, sizes. Bulletin 0620, 8 pages. Liquid Drive Div., G. E. Nelson Co., 318 N. Saginaw St., Holly, Mich. IEN-0763

DRIVES . . "Crofts" worm gear speed reducers with integral cooling fan; selection instructions, rating tables. Catalog 751, 32 pages. National Transmission Products, Inc., 684 Broadway, Dept. I, New York 12, N. Y. IEN-0764

DRIVES . . Gearmotors, ac. and dc. types, ½ to 75 hp.; illustrated types, condensed data on design and available ratios. Bulletin B-601, 8 pages. Star-Kimble Motor Div., 202 Bloomfield Ave., Bloomfield, N. J. IEN-0765

DRIVES . . Transmission that combines hydraulic torque converter and hydraulic coupling; description and typical applications. Bulletin TC-630, just released, 4 pages. Torcon Corp., 1152 W. 5th St., Ashtabula, Ohio IEN-0766

FASTENINGS . . Stock aluminum units; size and list prices on bolts, nuts, standard and tapping screws, wood screws, washers, rivets. "Aluminum Fastenings," 12 pages. H. M. Harper Co., 8202 Lehigh Road, Morton Grove, Ill. IEN-0767

FASTENINGS . . Standard and special washers; dimensions, list prices, finishes, American standards for washers, weight table. "Washer Catalog," 8 pages. Joliet Wrought Washer Co., Connell & Moen Sts., Joliet, Ill. IEN-0768

FASTENINGS . . Wood screw with double-pitch threads, cylindrical body, relieved shank, sharp threads; properties, pilot-hole size table. "Twinfast Screw," 4 pages. Townsend Co., 552 River Road, New Brighton, Pa. IEN-0769

FILING . . Rotary cutters, 3/16 to 2 in.; detail explanation of the company's identification method for its tools by means of a standard code. Bulletin GI-201, 4 pages. M. A. Ford Mfg. Co., 705 W. River St., Davenport, Iowa IEN-0770

FILTERING . . Catalog data on lines of air filters and electrostatic precipitators; principles, selection, sizes, ratings, installation. Bulletin 510, 36 pages. American Air Filter Co., 213 Central Ave., Louisville 8, Ky. IEN-0771

FILTERING . . "Fulflo" filters for liquids and gases; details on the filter element, condensed data on models and sizes available. Catalog PL-200, 4 pages. Commercial Filters Corp., 16-20 W. 3rd St., Boston 27, Mass. IEN-0772

FILTERING . . "Staynew" air filters in viscous-panel, range-hood and spray-booth types; sizes, performance curves, cleaning and charging. Bulletin 100, 8 pages. Dollinger Corp., 9-13 Centre Park, Rochester 3, N. Y. IEN-0773

FOUNDRY . . "AlSiMag" ceramic parts including strainer cores, gate tubes, troughs; illustrated types, standard designs, notes on use. Bulletin 522, 4 pages. American Lava Corp., 552 Cherokee Blvd., Chattanooga 5, Tenn. IEN-0774

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FOR ALL TYPES OF INDUSTRIAL FLOATS

WHEN you order from Chicago Float you're sure of getting high quality, dependable floats, regardless of what your requirements are. You can be sure that every float shipped is backed by more than 35 years' experience in the building of floats for every purpose — high or low pressures and temperatures, corrosive fluids, open tank applications or other specific uses. For everything in industrial floats, look to Chicago Float Works.

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- handles full flow [1]
- of many industrial fluids [2]
- removing 100% of solids [3]
- without stops for cleaning [4]
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*Models available for straining from .0035 to .062 in.

CUNO *Fluid Conditioning*
Removes More Sizes of Solids from More Types of Fluids

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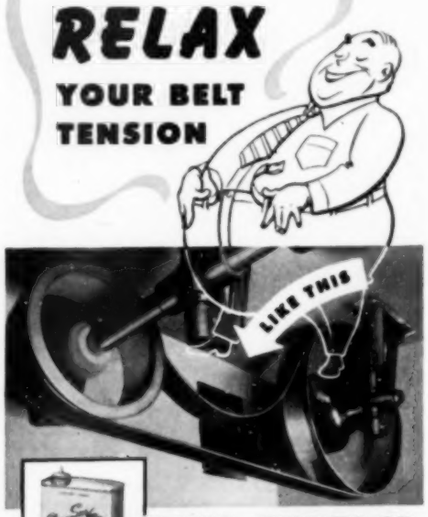
RELAX YOUR BELT TENSION



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1. WORK BETTER
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Stop running your transmission belts *tight!* Belts run under high tension, stretch and constantly require "take-ups" which cause costly down time. They increase the friction load, waste up to 50% of your power and place needless strain on bearings and shafting.

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The ONLY belt preservative in existence that has passed U. S. Government requirements, Cling-Surface is also the ONLY brand that DARES to recommend this economical, trouble-free, "slack belt" way to end belt worries. A trial will convince you! Sold on MONEY BACK GUARANTEE since 1896. Ask your mill supply man or,

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EXPLOSION PROOF TYPE X5

THE new Skinner X5 Solenoid Valve is basically the same as the widely accepted and tested V5, but modified to a construction that is Underwriters' approved for Class I, Group D hazardous locations. Small size and lightweight features are retained, and the X5 is low in price because of the many parts which are interchangeable with other Skinner valves. Rating is 10 watts max.; soft, spring loaded seals prevent leakage; internal parts are stainless steel; wide variety of port locations in 1/4" and 1/2" size; most types available for metering; for AC or DC in a wide range of voltages and frequencies; can be mounted in any position; supplied as two-way normally open or closed, three-way normally open, closed or directional flow. *Write today for details!*

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THE SKINNER CHUCK COMPANY
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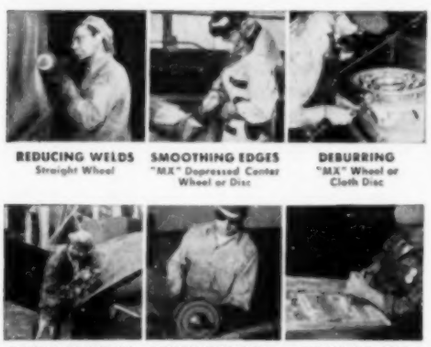
...for EVERY TYPE of abrasive in high-speed PORTABLE GRINDING...

...used on EVERY TYPE of portable grinding operation in metalworking...



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CARBORUNDUM

TRADE MARK

offers ALL abrasive products ...to give you the proper ONE

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Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Any speed to 5,000 rpm.

Geared-head motor in this new versatile stirrer is a universal unit rating 1/80 hp. It is enclosed design and is equipped with a three-position head for maximum speeds of 140, 825 and 5,000 rpm. Any one of these ranges can be selected for connection to the stirrer shaft by means of its nickel-plated holder or chuck. Motor speeds, up to the selected maximum, can be regulated at any intermediate point by rotating the control on a rheostat that is part of the assembly. The chuck will accommodate any rod to 1/4 in. in diameter and any special shaped stirring rod within that overall dimension.

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Source: CHICAGO RUBBER CO.
2618-22 Clybourn Ave., Chicago 14, Ill.

Rim is quickly replaceable

Aluminum flanges, one with an integral hub, clamp together by means of four Allen screws to mount the rubber rim in this new abrasive-belt contact wheel. It is known as Universal Type T-54 and is available with rims or tires in widths from 1 to 6 inches. In addition to the spiral teeth shown in the illustration the rim also can be supplied with a plain surface or with other designs of teeth for given grinding operations. Two diameters are 14 and 16 inches.

Identify as IEN-7907

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COMPLETE MOLDING AND MACHINING FACILITIES AVAILABLE

Rubber-bonded-to-metal fabrications now can be furnished for application in electrical switches, control valves, processing equipment, conveyors, controllers, heat-treating equipment and a wide range of other components.

Intricate or simplified parts can be fabricated with almost any metal or ceramic cross-section utilizing natural or synthetic rubber stocks.

Rubber-Metal parts can be furnished which will remain stable upon exposure to temperatures ranging from -75 to 200 degrees F. or to resist chemicals, oils and gases and effects of prolonged weathering. ANDAL is a manufacturer of parts for prime contractors of defense items.

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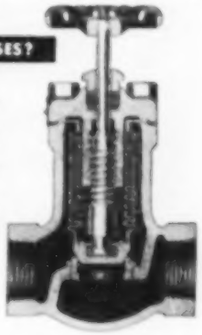
Prevent leaks ...in or out ...with SYLPHON PACKLESS VALVES



One of many types of Sylphon Packless Valves. Multiply seamless metal Sylphon bellows. Bellows ends welded. Renewable seat. Back-seating type stem.

• Save valuable liquids or gases—provide vacuum protection—protect against fire, explosion or other damage—with Sylphon Packless Valves. Seamless metal bellows replaces customary packing, provides positive seal. Wide range of sizes, types and materials—some for pressures up to 500 lbs. and temperatures up to 1000°F. Used in chemical plants, refineries, power plants, aboard ships—on lines carrying oil, gasoline, other volatile liquids or vapors. Write for Bulletin NN-813.

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ROBERTSHAW-FULTON CONTROLS CO. • KNOXVILLE 4, TENN.
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SURE-GRIP HOSE CLAMPS

- CAN BE REUSED
- HEAVY STEEL
- PERFECT CIRCLE

Clancy clamps grip evenly, hold any pressure the hose stands. Each part separately galvanized . . . no raw edges, won't rust. Sure-Grips keep their shape, can be removed and reused. For air, gas, water or steam. Every size to fit foreign or domestic hose. Write for prices.

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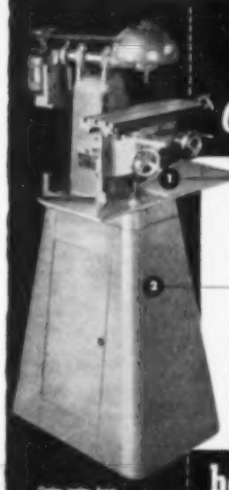

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CAPTURES COOLANT RUN-OFF
Confines coolant to the table working area, draining surplus back to sump. Sheet steel edges rolled and beaded for extra strength. Size extends beyond all table movements. Easily attached by flanges provided.

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CONVERTS BENCH MILL TO FLOOR MILL
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THE QUADRIGA MANUFACTURING CO.

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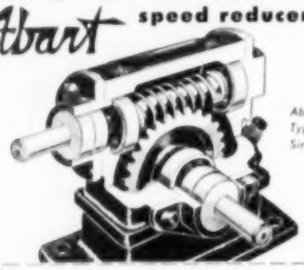
Here's the INSIDE Of An Abart speed reducer



Abart Type 1½ A Single Reduction

Just note the simple design, trouble-proof construction — worm wheel, bearings, oil seals — with the compact, oil-tight housing that contains all bearing supports to insure permanent alignment! Too — the large oil reservoir base for positive lubrication. Long-life, trouble-free Abart single and double reduction Speed Reducers are available in spur gear, worm gear, or combination gear types from 1/50 to 168 HP with ratios up to 10,000 to 1. Sales and service nation wide. Ask for this pocket size data book and Catalog, and name of your nearest distributor.

Abart GEAR & MACHINE CO.

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Mfrs. of Gears, Speed Reducers and Gearmotors

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NEW LITERATURE — Continued

GAGES . . Pre-setting gages for tools in a multiple-spindle machine; data on flush pin and height gages, range of dimensions, uses. Bulletin 19-50, 4 pages. Scully Jones & Co., 1099 South Rockwell St., Chicago 8, Ill. **IEN-0775**

GRINDING . . Machine to sharpen drills from No. 70 to ¼ in.; illustrated operating sequence, adjustments, specifications, suggested point angles. Folder 1000-52, 4 pages. Dumore Co., 1392 17th St., Racine, Wis. **IEN-0776**

GRINDING . . Tool and cutter grinding machines; data on standard models and equipment, fixtures and attachments, work setups. "Knock-Out Grinders," 12 pages. K. O. Lee Co., First at Congress, Aberdeen, South Dakota **IEN-0777**

GRINDING . . "See-O-Met" diamond wheels and hones; dimensional drawings and tables, list prices, suggestions on care and maintenance. Catalog 52, 32 pages. J. K. Smit & Sons Inc., 552 Murray St., Murray Hill, N. J. **IEN-0778**

HANDLING . . "Pallet Loader" machine to stack cases or cartons on pallets at 1,500 to 1,800 per hour; operating sequence, application data. Bulletin 748, 16 pages. Lamson Corp., 303-5 Lamson St., Syracuse 1, N. Y. **IEN-0779**

HEAT TREATING . . Direct-fired furnaces for a variety of operations from 400 to 2,500 deg. F.; picture examples of production units. Bulletin 8C-156, 4 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio **IEN-0780**

HOSE . . Assemblies of hydraulic hose and couplings; sizes, dimensions, pressure ratings, coupling details, length and flow computation. Catalog 52-S, 8 pages. Anchor Coupling Co., 4th and East Church Sts., Libertyville, Ill. **IEN-0781**

INSULATING . . Electrical tape which bonds to itself to form a permanent watertight seal; properties, test sample, instructions, uses. "Bi-Seal Tape," 6 pages. Bishop Mfg. Corp., 80 Factory St., Cedar Grove, N. J. **IEN-0782**

ISOLATING . . "Elasto-Rib" cork-and-rubber pads to isolate machine vibration; properties, load-deflection chart, assembled units. Catalog ER-702, 4 pages. Korfund Co., 48-35 32nd Place, Long Island City 1, N. Y. **IEN-0783**

LIGHTING . . Fluorescent fixtures for machine lighting, illuminated magnifiers; specifications on a variety of models. "The Hottest Idea in Cool Lighting," 24 pages. Stocker & Yale, 46-50 Birch St., Marblehead, Mass. **IEN-0784**

LIGHTING . . Disconnecting hangers to lower overhead fixtures for servicing; assembly details, components, installation drawings. Bulletin TH-52, 8 pages. Thompson Electric Co., 1111-39 Power Ave., Cleveland 14, Ohio **IEN-0785**

LUBRICATING . . "Valve Seal A" non-melting silicone lubricant for plug and other valves; properties, application, performance test data. Bulletin VAS-1, 4 pages. Dow Corning Corp., P. O. Box 592-A, Midland, Mich. **IEN-0786**

LUBRICATING . . Unit to supply cooling air jet and lubricant vapor to a metal-cutting operation; operation, applications. "Atom-Lube," 4 pages. Henry G. Thompson & Son Co., Mill and Chapel Sts., New Haven 5, Conn. **IEN-0787**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7915

Bin Stuck Lately?

Don't ruin your Bins

Vibrate them with a TYPE F CLEVELAND AIR VIBRATOR

• Steel Chips . . . Dry Colors . . . Concrete . . . Fertilizer . . . Sand . . . Coal . . . Soap . . . Sawdust . . . Vegetables . . . Chipped Ice . . . Meat . . . Candy . . . Wood Chips . . .

Or any other 'granulars' free up fast with a Type F Cleveland AIR Vibrator. Eliminate plugged or arched conditions. Write for Catalog No. 105 for complete details.

THE CLEVELAND VIBRATOR COMPANY

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DARNELL CASTERS & E-Z ROLL WHEELS

DARNELL CORPORATION, LTD.

DOWNEY, (Los Angeles County) CALIF.

60 Walker Street, New York 13, N.Y.

36 North Clinton, Chicago 6, Illinois

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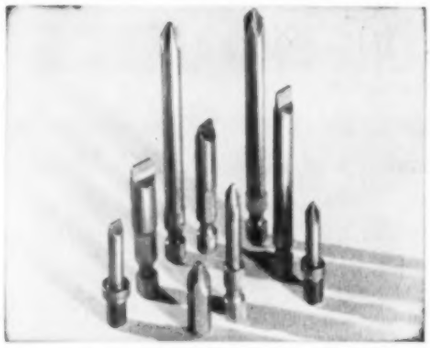

You save replacement time with HOMMEL power screwdriver bits

Specially selected alloy steel and proper heat treating have given Hommel bits the hardness and toughness required for maximum service without replacement. A complete line for air and electric power screwdrivers is available . . . consisting of ¼ hex drive and threaded shank bits for slotted, Phillips, Frearson or Reed and Prince screws. Write now for catalog to Dept. IEN.

Since 1906 HOMMEL

Ludwig Hommel & Co., 72 First Ave., Pittsburgh 22, Pa.

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IRON BULWARK AGAINST CORROSIVE FLUIDS

Fairbanks® all iron gate valves

Fig. 0904 ALL IRON GATE VALVE 125# SWP 200# WOG Solid Wedge Taper Seat Malleable Iron Seat Rings 2"–12" Sizes

. . . made of high-test alloy iron to withstand the action of many of the strongest chemicals, give long service under severe operating conditions. These, like all other Fairbanks Valves are low in maintenance cost, easy to operate and long-lasting in service . . . a real answer to cost-cutting needs today.

Fig. 0318 ALL IRON GATE VALVE 150# SWP 225# WOG

Fig. 0418 IRON BODY U-BOLT GATE VALVE 150# SWP 225# WOG

For other types of corrosive fluids such as dry carbon dioxide, ethyl acetate, and malt beverages, use FAIRBANKS BRONZE SOLDER END AND FAIRCO-BRAZE (Silver-Brazed) Valves.

For full details consult your distributor or write direct

THE Fairbanks COMPANY

393 LAFAYETTE STREET • NEW YORK 3, N. Y.

CASTERS • TRUCKS • VALVES • DART & "PIC" UNIONS

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ALL PEERLESS MOTORS ARE

"Peerless Registered"

MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U.S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection.

This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor—anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO
Manufacturers of Quality Motors Since 1893
Single Phase • Polyphase • Direct Current • ½ to 15 H.P.

Peerless-Electric MOTORS-FANS-BLOWERS

If you write maker identify as IEN-7920

Introducing a New Winner... and "Production" Champion

The NEW . . . COMPLETE LINE of

Westinghouse Cushioned Pneumatic Cylinders

8 PRODUCTION BOOSTING FEATURES

1. Diameters: 1½" to 8" . . . any required stroke
2. Cushioned Adjustable Stroke
3. Flange, Foot, Swivel, or Trunnion Mounting
4. Pressure Type End Seals Against Leakage
5. Rotating Heads for Easy Installation
6. Solid Construction—No Stay Bolt Stretch
7. Stock Heads, Rods and Barrels Assemble to Meet Requirements
8. Packing Cups of Famous "WABCO" Composition

. . . and a complete range of modern pneumatic controls

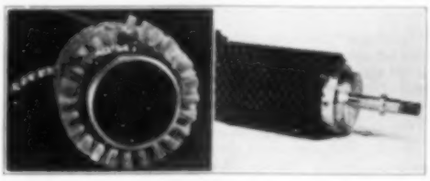
WESTINGHOUSE
AIR BRAKE COMPANY
WILMERDING, PENNA.
INDUSTRIAL PRODUCTS DIVISION

Factory Branch: EMERYVILLE, CALIF. Distributors throughout the United States . . . Consult your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

If you write maker identify as IEN-7922

BRUSH . . Cylindrical design in sizes to 15 inches by 22 feet

Source: INDUSTRIAL BRUSH CO.
24 Woodside Ave., Little Falls, N. J.



For process use

Tufts of bristle are set in solvent-resisting cement in slotted bands made of stainless steel or copper in this new brush. The assembled bands are wound on an aluminum or steel core where they are held at intervals by screws anchoring to the core. Mounting is on a shaft of specified size and design to complete the assembly. The construction permits operation of the brush in wet or dry service. Any length can be specified to 22 feet. Outside diameter ranges from 3 to 15 inches.

If you write maker identify as IEN-7923

DRIVE . . Link type V-belt assembles from stock as required

Source: BRAMMER CO.
684 Broadway, Dept. I, New York 12, N. Y.

List is 76 cents to $2.15 per foot

V-Link trade names new design of the company's link-type V-belt in which new patented leather protector washers fit over the assembly studs for application involving heavy duty. The washers protect the link fabric. They also stabilize whip action caused by a pulsating load. The links are made for assembly into belts measuring ⅝ to 1¼ in. or No. O, A, B, C, and D V-belt sizes.

Individual links are made from woven cloth impregnated with crude rubber that is resistant to heat and contact with oil. The studs carry convex heads. The belt is shipped in 100-ft. length on reels to be stocked and used as required.

Identify as IEN-7924

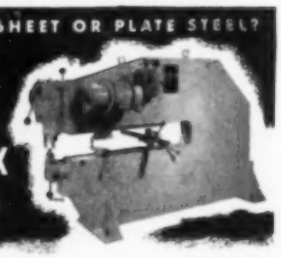
It may pay you to check your steam lines this summer to find those operating at high pressure from which you could obtain additional heating capacity by installing a Strong Carlisle & Hammond reflash steam separator. This unit takes condensate from the high pressure system as it passes through high pressure traps. It permits the condensate to reflash into low-pressure steam for further heating or processing use. The equipment operates with a trap at its own outgoing connection so the condensate, which forms again after the flashing operation, can be returned to the boiler.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7925

WORKING SHEET OR PLATE STEEL?

LOOK at what PULLMAX CAN DO



STRAIGHT CUTTING

Straight cutting, circle cutting, free hand cutting, slot cutting, beading, folding, louvering and many variations of these operations . . . ALL ON ONE PULLMAX MACHINE! Easy to set up and change tools . . . seven sizes of machines work materials up to 11/32" in mild steel . . . also works stainless steels, non-ferrous metals, wire mesh and plastics.

CIRCLE CUTTING **FOLDING**

WRITE FOR LITERATURE

SLOT CUTTING **BEADING** **FREEHAND**

PULLMAX—A complete sheet and plate working shop in one machine

AMERICAN PULLMAX CO., INC.
2459 N. SHEFFIELD AVENUE CHICAGO 14, ILLINOIS

If you write maker identify as IEN-7926

FOR YOUR PANEL DIALCO
A NOVEL and UNIQUE CIRCUIT INDICATOR

DESIGNED FOR NE-51 NEON LAMP
For 110 or 220 volt circuits
The required resistor is an integral part of this assembly —"built-in."
RUGGED DEPENDABLE LOW IN COST

PATENTED: No. 2,421,321; Cat. No. 521306-997

WILL *YOU* TRY A SAMPLE?

Write on your company letterhead. We will act at once. *No charge, of course.*

SEND FOR THE 192 PAGE HANDBOOK OF PILOT LIGHTS

Among our thousands of Pilot Light Assemblies there is one which will fit your special conditions. Many are especially made and approved for military use. We pride ourselves on prompt deliveries—any quantity.

ASK FOR OUR APPLICATION ENGINEERING SERVICE

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA
900 BROADWAY, NEW YORK 3, N. Y. SPRING 7-1300

If you write maker identify as IEN-7927

Raw Stock or Complete Fabricated Assemblies . . .

General Plate has the Facilities to meet all your Electrical Contact Requirements

There are many advantages for using General Plate composite contact materials and completely fabricated assemblies. Among the more important are better performance, longer operating life and lower fabricating costs.

Raw stock is supplied in various combinations, in overlay, single or double inlay, single or double edgelay, and Top-Lay stock. The precious metal is clad to your required base metals such as brass, bronze, nickel, monel, copper, beryllium copper, etc. In addition General Plate provides composite buttons, rivets, stampings, welded or brazed assemblies.

General Plate fabricated assemblies, including assemblies requiring stampings, screw machine or headed parts with contacts attached, etc., are made to your exact specifications.

Make General Plate your headquarters for solid or composite contacts, contact material and fabricated contact assemblies as well as other composite metals.

GENERAL PLATE
Division of Metals & Controls Corporation
77 FOREST STREET, ATTLEBORO, MASSACHUSETTS

If you write maker identify as IEN-7928

Look!

THE NEW

BAKER TYPE FS

gives you the most material handling you can get for your money in a

2000 POUND FORK TRUCK

Here's Why:

▶ **IT'S BUILT to take PUNISHMENT!**
All-Steel welded frame; powerful Baker motors; efficient worm-drive power axle; dynamic braking, 2-drum, 5 speed, NO Plug controller—all components are of the same basic construction as in our heavy-duty equipment for capacities up to 10,000 pounds.

▶ **IT'S the most MANEUVERABLE Truck in its class!**
An FS with 36-inch forks can make a "U" turn in an 8½-foot aisle! It can stack a 48-inch load at right angles to a 10-foot aisle without sacrificing stability.

▶ **IT'S ECONOMICAL!**
100% functional design means that every dollar you invest goes to work for you. You save on operating and on maintenance costs. *The FS is always on the job!* By any standard you apply, the FS is the best buy in its class.

All the features engineered into the outstanding Baker Type FS, 2000-pound Fork Truck are described in an illustrated 8-page specification bulletin. • Write for your copy.

THE BAKER-RAULANG CO.
1226 WEST 80th STREET, CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

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Safest grinder made...

the DELTA Bench Type TOOL GRINDER

—"IT CAN'T FORGET ITS GOGGLES"

WHEELS—Absolute true balance, vibrationless for accurate tool grinding.
TOOL RESTS—Fully machined. Allow vertical and horizontal adjustment. Designed for full use of both sides of wheel. Easily detached.
WHEEL GUARDS—Heavy cast iron, steel side plates. Heat cracked regulations. Chips discharges dust. Spark guard adjustable.
SAFETY SHIELDS—Patented Twin-Lite, double-thickness shatter-proof glass. Lamps floodlight wheels. No glare.
BEARINGS—Precision double-seal ball bearings. No oiling for life of bearing.

WRITE FOR CATALOG

There's a Delta Power Tool for Your Job - Wood or Metal Working

53 MACHINES—246 MODELS—MORE THAN 1300 ACCESSORIES

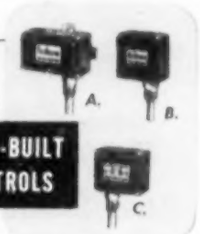
For Delta dealers, see your Classified Phone Directory under "Tools"

DELTA MILWAUKEE

DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
642G N. LEXINGTON AVE., PITTSBURGH 8, PA.

If you write maker identify as IEN-7930

A. TYPE B5
B. TYPE C11



COMPACT, PRECISION-BUILT TEMPERATURE CONTROLS

C. TYPE C7

The features of compactness, low cost and direct immersion thermal assembly make the precision-built Type B5 thermostat—an ideal control for use on hot water tanks, boilers and degreasers.

A variation of the Type B5 and designated Type C11 offers shock and vibration-resistant features plus internal adjustment which make it suitable for rugged installations such as internal combustion engines or marine applications.

Still another variation, the Type C7 is a small, compact unit for installations where space is limited and the weight factor important.

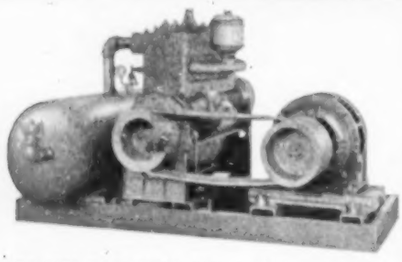
For complete information on the Type B5, ask for Bulletin #2-1. Specifications for the Type C11 are contained in Bulletin #2-3 and for the Type C7, in Bulletin #2-4. Write for the Bulletin covering the control in which you are interested.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN-7931

SCHRAMM Unistage AIR COMPRESSOR



ON BASE WITH MOTOR AND HORIZONTAL RECEIVER SCHRAMM "V" Belt Drive On Base compressors are built for 24-hour continuous service with the last up-keep and operating cost. Built in sizes ranging from ½ to 100 h.p. Write for Catalog 5110.

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

NEW LITERATURE—Continued

MARKING . . Spray stencils to use in marking parts such as electronic chassis; picture examples including a transparent overlay. "Any Questions?", 4 pages. Jas. H. Matthews & Co., 2948 Forbes St., Pittsburgh 13, Pa. IEN-0788

METERS . . Armored "Flowrator" meters to use with high temperature, high pressure, liquid hammer or hazardous liquids; operation, models. Catalog 40, 12 pages. Fischer & Porter Co., 6300 County Line Road, Hatboro, Pa. IEN-0789

METERS . . Liquid meter and accessory equipment to dispense liquefied petroleum gas; data on the meter and components. Bulletin OG-250-1, 6 pages. Rockwell Mfg. Co., 402 North Lexington Ave., Pittsburgh 8, Pa. IEN-0790

MILLING . . Vertical profiling and milling machine with 14 by 18-in. table; detail description on construction, specification summary. "12-M Machine," 8 pages. Morey Machinery Co., 402 Broome St., New York 13, N. Y. IEN-0791

MIXING . . "Simpson Mix-Muller" machines for dry to pasty materials; mixing action, data on 30 and 60 cu. ft. models. Bulletin 500, 6 pages. National Engineering Co., 545-9 W. Washington Boulevard, Chicago, Ill. IEN-0792

MIXING . . "Intensive" mixer for difficult materials, also dispersion, kneading, other mixing machines; condensed descriptions, sizes. Bulletin T-452, 4 pages. Struthers Wells Corp., 51 Wells St., Titusville, Pa. IEN-0793

MOTORS . . Squirrel-cage induction, ½ to 100 hp., drip-proof and splash-proof; two-page cut-away view, hp. chart, dimensions. Bulletin 51-B-6210-D, 6 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. IEN-0794

MOTORS . . Molded brush holders for fractional-hp. motors; illustrated data on stock units and standardized custom assembly. Catalog 52-H, 19 sheets. Phoenix Electric Mfg. Co., 700-13 W. Lake St., Chicago 6, Ill. IEN-0795

MOTORS . . And controls for textile plants; design points, lubrication, corrosion, tension control; literature. Booklet B-5422, 32 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Room 1116, Pittsburgh 30, Pa. IEN-0796

PHOTOGRAPHING . . Lamps including photo-flash, photo-flood, reflector, repeat-flash, projection, dark-room types; condensed data, list prices. Catalog 4-287, 28 pages. General Electric Co., 1 Nela Park, Cleveland 12, Ohio IEN-0797

PISTON RINGS . . For engines, compressors, hydraulic equipment; illustrated descriptions on types to 32 in. in diameter, data tables. "Piston Rings," 20 pages. Safety Seal Piston Ring Co., Box 108-A, Fort Worth 1, Texas IEN-0798

PLASTICS . . "Styrofoam" expanded polystyrene plastic; technical data on properties, applications, working methods, adhesives, sizes. Booklet PL-51-C, 24 pages. Dow Chemical Co., 913-17 Jefferson Ave., Midland, Mich. IEN-0799

PLASTICS . . Rigid polyvinyl-chloride material in sheet, rod, pipe, fabricated parts; physical properties, sizes, applications. "Boltaron 6300," 4 pages. H. N. Hartwell & Son Inc., 29-33 St. James Ave., Boston 16, Mass. IEN-0800

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7932

for amplifying SMALL d-c Voltages and Currents

The General Radio Type 715-A Direct Current Amplifier in conjunction with the Esterline-Angus 5 ma recorder, has been used for recording life tests on vacuum tubes, studying sound and vibration intensities, insulation resistance of electrical machinery, and for a very wide variety of industrial and research problems. It can be used to operate from photo-electric cells, resistance strain gauges, resistance thermometers and other devices.

RANGE: *four give outputs of 5 ma across 1,000 ohms for input voltages of 0.1, 0.2, 0.5, and 1 volt.* **ACCURACY:** *1% of full scale.* **INPUT CIRCUIT:** *Input resistance is variable from 100 to 10,000,000 ohms.* **OUTPUT CIRCUIT:** *output resistance is selected by switch so that instrument always works into 1,000 ohms.* **METER CIRCUIT:** *bridge-type balancing network with voltage regulator tube. Coarse and fine adjustment for meter zero.* **STABILITY:** *three pentodes in degenerative circuit provide high stability. Normal variations in a-c line voltage, temperature and humidity have no effect on meter readings.*

GENERAL RADIO Company
275 Massachusetts Avenue
Cambridge 39, Mass.
NEW YORK CHICAGO LOS ANGELES

Type 715-AM
D-C Amplifier (In Walnut Cabinet) . . . $320.00

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a nickel a 'blow'

SHAWMUT t-d RENEWABLE LINKS COST AS LITTLE AS 5¢ TO REPLACE

Save with Shawmut t-d RENEWABLES

Both Knife-Blade and Ferrule Types for 250 and 600 volt circuits, from 0 to 600 Amps.

MAXIMUM PROTECTION WITH MAXIMUM TIME DELAY

The Shawmut "t-d" link gives both maximum time delay in the higher current ranges—and maximum protection in the overload zone. On short circuit, operation is instantaneous—the notches of the t-d link blow one after the other with action like a 4-step rheostat, limiting the voltage rise.

t-d FUSES & t-d LINKS

All Shawmut t-d fuses are renewable and have completely interchangeable links and parts. Knife-blade type from 70 to 600 Amps for either 250V or 600V circuits. Ferrule types from 0 to 60 Amps.

ORDER NOW OR SEND FOR SHAWMUT t-d BULLETIN 500

t-d—"Made At The Switch"

THE CHASE-SHAWMUT CO.
380 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

If you write maker identify as IEN-7934

NOW—GET DIESEL POWERED BUDA TOWING TRACTORS

LOWER operating cost
LESS maintenance
GREATER safety
LONGER operation between overhauls

Diesel Powered A-14-V Towing Tractor—2400 lbs. draw bar pull

6H-28

Cut fuel costs 50 to 65% with Buda Diesel-powered towing tractors and get safer, non-toxic, non-contaminating operation. Eliminate fire hazards. Diesel-powered tractors can operate safely in hazardous areas. Buda Diesel power gives more hours of dependable, low-maintenance operation and long-life performance.

Ask your nearby Buda Material Handling Distributor about Buda Diesel Powered equipment. He has the facts. Write for Bulletins and specification data. THE BUDA COMPANY, HARVEY, ILL.

. . . The Line with ALL 3 for Diversified Handling

BUDA

If you write maker identify as IEN-7935

DO YOU USE SHAFTS IN YOUR PRODUCT?

For 30 years, we have been working with all kinds of metals . . . making all sizes and types of crankshafts, eccentric shafts, and drive shafts to precise and exacting specifications. Our manufacturing skill, combined with our experience, produces shafts of absolute fit—eliminates reworks and rejects.

If you use shafts in your product, regardless of your requirements, you can look to us as a dependable source of supply. Send us your specifications today. We will contact you promptly.

YORK Electric & Machine Co., Inc.
YORK, PA.

Makers of BILTWELL-FOREMAN *Axle Shafts for the automotive industry . . . with world wide distribution.*

"WHERE PRIDE OF PRODUCT PREVAILS"

If you write maker identify as IEN-7936

Some like them green...
Some like them clear...

Safety Goggles

Either Style gives
Wide Vision and Comfort

AO Panoram Goggles

Workers obtain a "picture window" view of the work with AO's Panoram Goggles. Both the "600" model for large and medium size faces and the "800" for smaller faces are available in any combination of green or clear lenses or frames. Rubber cushions are available for utmost comfort when goggle must be worn for long periods of chipping, grinding, babbitting, riveting, spot welding and similar work. Your nearest AO Safety Products Representative can supply you.

Register and Vote!

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN-7937

MEET YOUR H-F REQUIREMENTS with *Federal's* Complete Line of RG TYPE CABLES

Including the Federal-developed
LOW TEMPERATURE NON-CONTAMINATING THERMOPLASTIC JACKET

Approved Army-Navy and Special Types for

H-F Communications • Television • Industrial Electronics Radio and TV Lead-ins • Aviation • Test Equipment Radar, Pulse and Experimental Equipment

Federal's complete line of coaxial cables is backed by years of unique experience, rigid quality control and modern manufacturing methods . . . assuring the utmost in *durability* and *dependable* performance. Whatever your requirements for H-F coaxial cables—*look to Federal first!*

SAVE THIS LIST

FEDERAL RG TYPE COAXIAL CABLES

REGULAR JACKET

RG-5/U	RG-14/U	RG-23/U	RG-59/U
RG-6/U	RG-15/U	RG-34/U	RG-62/U
RG-7/U	RG-17/U	RG-29/U	RG-63/U
RG-8/U	RG-18/U	RG-34/U	RG-65/U
RG-9/U	RG-19/U	RG-35/U	RG-71/U
RG-9A/U	RG-20/U	RG-54A/U	RG-74/U
RG-10/U	RG-21/U	RG-55/U	RG-79/U
RG-11/U	RG-22/U	RG-57/U	RG-108/U
RG-12/U	RG-22A/U	RG-58/U	RG-111/U
RG-13/U	RG-22B/U	RG-58A/U	

LOW TEMPERATURE NON-CONTAMINATING JACKET
Types approved to date—

RG-5B/U	RG-11A/U	RG-22B/U	RG-62A/U
RG-6A/U	RG-12A/U	RG-58B/U	RG-63B/U
RG-8A/U	RG-13A/U	RG-58C/U	RG-65A/U
RG-9B/U	RG-21A/U	RG-59A/U	RG-79B/U
RG-10A/U			

The following types—over ½-inch diameter—are available, subject to military approval:

RG-14A/U	RG-18A/U	RG-20A/U	RG-34A/U
RG-17A/U	RG-19A/U	RG-23A/U	RG-74A/U

Federal Telephone and Radio Corporation
Selenium-Intelin Division—Clifton, N. J.

COMPLETE COAXIAL CABLE ASSEMBLIES also are available from Federal—to meet your requirements. For complete details, write to Selenium-Intelin Division, Dept. D-823.

Federal Telephone and Radio Corporation
100 KINGSLAND RD.
CLIFTON, N. J.

If you write maker identify as IEN-7939

HANDLING . . Plastic container molded in one piece of Fiberglas

Source: LAMINEX CORP.
992-96 Jefferson St., Fall River, Mass.

No joints, no cracks

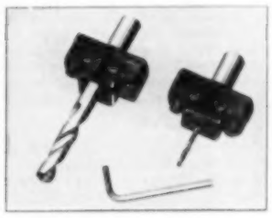
The company announces availability of the body portion only of its caster-equipped truck, previously described IEN-1851-52, for various material-handling and processing purposes. The unit is molded of one piece of impregnated Fiberglas with a rounded reinforcing top rail, integral ribs, smooth interior and exterior, curved radii in the corners so there is nothing that might damage delicate materials in its construction.

The container will not collect static electricity. It is not subject to attack by a variety of chemicals. Cleaning presents no problem. Smallest unit is circular in section measuring 17½ in. in diameter at the top by 13½ in. at the bottom. It stands 14¾ in. in height. Rectangular sizes range from 20 by 20 by 20 in. to 75 by 48 by 36 in. with volume capacity at 50 to 550 gal. within this spread of sizes.

If you write maker identify as IEN-7940

LATHE TOOLS . . Adjustable holder for drills, counterbores, reamers

Source: BROOKFIELD INC.
753-57 Boylston St., Boston 16, Mass.



Known as Model THA-2

Tool shanks, measuring 1/64 to ½ in. in diameter, are held in a vise-like grip by the V-jaws in this new tool holder. The jaws, in turn, are clamped in place on the holder body so they can be moved to "float" a tool into center position or offset it as required. The holder is made of hardened steel with critical surfaces ground so run-out is less than 0.0001 in. per inch. The holder will take any shaped tool or tool bit within its shank-holding range. It is carried in stock shank-diameter sizes of ⅝ and ¾ inch.

Identify as IEN-7941

Dow Corning has assembled a wealth of useful information on the manufacture of molded parts by low pressure lamination of glass cloth impregnated with its No. 2104 silicone bonding resin. Finished products exhibit remarkable physical, chemical and electrical properties. They are capable of service in temperatures to 500 deg. F. steadily, 900 deg. F. intermittently. The company is prepared to assist you with this information if you are considering manufacture of the laminates or use of the finished molded products. Field service and laboratory technicians also are available, particularly for laminate manufacturing problems.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7942

Struthers Wells **IMPREGNATOR**

. . . with the Quick Opening Closure

The improved Struthers Wells Impregnator shown above—one of many recent installations—is used for vacuum impregnation of magnesium castings, using a styrene based resin as impregnant. Tanks are cooled by refrigerant and insulated. Cover is quickly removed or installed with great savings in labor. Furnished bare, or as complete units with piping, instruments and accessories.

May be heated by steam, electricity or heat transfer medium.

Write for Bulletin B-30 (on your letterhead, please)

STRUTHERS WELLS CORPORATION
WARREN, PA. *Plants at WARREN, PA. and TITUSVILLE, PA.*

If you write maker identify as IEN-7943

NEW *Pneumatic Drill*

50% more powerful than previous models

Weighing only 2¾ pounds, with ¼" heavy-duty chuck, the CP-3017 PNEUMATIC DRILL has ample power to drill high-strength alloys, rapidly and cleanly, without stalling on break-through. Graduated poppet type valve gives controlled starting. Built-in regulator permits reduction of speed and power if desired. Oil reservoir in handle for motor lubrication. Five models with speeds from 500 rpm to 15,000 rpm. Write for full information.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 48th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN-7944

better...
faster drawing on

VINYLITE RIGID SHEET!

Here's the newest, most advanced idea in drawing materials—semi-transparent sheets of VINYLITE Brand Plastic . . . with accurate grid lines and title blocks printed *from the back!*

This means that drawings can be made with more precision, more easily, for these sheets of VINYLITE Plastics are dimensionally stable—won't shrink or stretch. It means clean, quick erasures—even ink can be scratched off with a razor blade. Your pencil is never in contact with the printing that *shows through* the tough sheet!

What's more, sheets of VINYLITE Plastic are easy to keep clean—they won't absorb grease, are resistant to water, perspiration, chemicals, most acids and alkalies. Finger marks and smudges wipe off with a damp cloth. And VINYLITE Rigid Sheets are easy to handle—stiff and crisp, yet pliable, they roll up or lie flat—resist wrinkling, cracking, fraying and aging. Since drawings can readily be removed from them, they can be re-used again and again this new time-and-money-saving way.

VINYLITE Rigid Sheets are finding scores of uses in defense and basic industry—templates, calculators, precision drafting instruments, maps and photographic transparencies, for instance. Learn more about them. Write Dept. N-3.

Data on "Dimoglass" sheets courtesy Di-Noc Company, Cleveland, Ohio

Vinylite BRAND **PLASTICS**

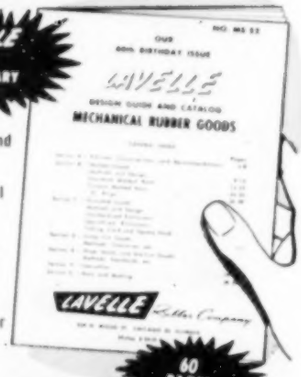
TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN-7946

INDUSTRY HAS NEVER SEEN ANYTHING LIKE IT!

LAVELLE 40th ANNIVERSARY ISSUE



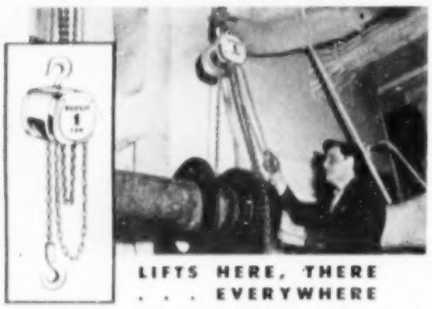
Characteristics And Recommended Usage For Natural And Synthetic Rubber Polymers, And Complete Design Data On Mechanical Rubber Specialties!

60 PAGES

LAVELLE Rubber Company

1811 WEST HUBBARD STREET, CHICAGO 22, ILLINOIS

If you write maker identify as IEN-7947



LIFTS HERE, THERE . . . EVERYWHERE

Light weight, ruggedness, and speed make the portable 'Budgit' Aluminum Chain Block tops for every imaginable spot-lifting job. It's a one-man hoist — easy to carry, hang up, and use anywhere. The ½-ton size weighs a mere 29 lbs. A pull of only 25 pounds on the hand chain lifts the full load!

For on-the-spot hoisting service unmatched by any other chain block — choose 'Budgit.' For design, engineering, and construction features backed by over 60 years of experience in building load-handling equipment exclusively — 'Budgit' is the chain block to buy. It's available in ¼, ½, 1, and 2-ton capacities. Bulletin 398 gives full details about this powerful hoist. Write for a copy.

'Budgit' CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

If you write maker identify as IEN-7948

HERE'S EVERYTHING FOR PRECISION BORING and INTERNAL THREADING

HIGH SPEED STEEL TOOLS

CARBIDE-TIPPED TOOLS

SOLID CARBIDE TOOLS

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NEW LITERATURE — Continued

PLASTICS . . Hard transparent plastic sheet for window and cover use; properties, fabrication, mounting. Bulletin CR-39, released locally last year, 12 pages. Homalite Corp., 9-15 Brookside Drive, Wilmington 166, Del. **IEN-0801**

PLASTICS . . "Plaskon-440" glass-fiber-reinforced alkyd molding material; suggestions on mold design, preforming, molding. Bulletin A-10, 4 pages. Libbey-Owens-Ford Glass Co., 2114 Sylvan Ave., Toledo 6, Ohio **IEN-0802**

PLASTICS . . Materials to finish metal and wood, bond cores, adhere abrasives, seal castings, produce rigid foam; data summaries. "Liquid Phenolic Resins," 8 pages. Marblette Corp., 37-23 30th St., Long Island City 1, N. Y. **IEN-0803**

PLASTICS . . Resins for use as adhesives, impregnants, coatings, compounding; forms, properties, stability, application notes. "Specifications Chart," 15 by 28 inches. Synvar Corp., 452 Thomas St., Wilmington 99, Del. **IEN-0804**

PLASTICS . . Rubber plasticized acrylonitrile resin for molding and extrusions; mechanical and electrical properties, molding, finishing, uses. "Kralastic," 4 sheets. United States Rubber Co., 1232 Sixth Ave., New York 20, N. Y. **IEN-0805**

PLASTICS . . Low-pressure laminated products from boats to signs, also wood and metal products; illustrated examples, plant facilities. "Winner Makes All," 12 pages. Winner Mfg. Co., Dept. IEN, West Trenton 3, N. J. **IEN-0806**

PRESSES . . Machine to punch, notch, nibble sheet metal to ¼ in.; types of work performed, construction, equipment. "Fabricator Catalog 10-A," 8 pages. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y. **IEN-0807**

PRINTING . . "Copyflex" Model 30 machine to copy anything drawn, typed, written or printed on translucent paper; specification summary. Folder A-2030, 4 pages. Charles Bruning Co., 123-27 North St., Teterboro, N. J. **IEN-0808**

PROTECTING . . Gloves in neoprene, neoprene-coated and vinyl-plastic coated types; selection table, performance data, types, sizes. Catalog, 14 sheets. Pioneer Rubber Co., 240-44 Tiffin Road, Willard, Ohio **IEN-0809**

PUMPS . . With tank and connections for coolants and lubricants; selection chart by type of machine tool, specifications. Catalog 15250-A, 6 pages. Graymills Corp., 3703-7 North Lincoln Ave., Chicago 13, Ill. **IEN-0810**

PUMPS . . Oil-hydraulic units to 50,000 lb., 5 to 25 gpm.; drawings and data on these and operating valves, power units. Catalog, 20 pages. Superdraulic Corp., 14254-58 Wyoming Ave., Detroit 4, Mich. **IEN-0811**

PYROMETERS . . Instrument and motor-driven switch to read temperature at 11 to 20 points; description, application schematics. "Pyrotac," 8 pages. Illinois Testing Laboratories, 418-22 N. La Salle St., Chicago 10, Ill. **IEN-0812**

RECORD KEEPING . . Punched-card equipment for accounting; description on use in one company for a variety of work. Folder S-1770, 6 pages. Remington Rand Inc., 315 Fourth Ave., Room 1618, New York 10, N. Y. **IEN-0813**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7949

SPRAY your belts to STOP Slipping!

GRAKO Sprazon BELT DRESSING

Sprays on direct from container

New! Unique! Easy to use! Press the valve and spray your belts where slippage occurs — at the smaller pulley. Millions of tiny globules penetrate the leather fibres — make belts pliable, resilient — increase pulley grip. *Safe*: hands and arms are out of danger. *Economical*: 12 oz. container holds enough GRAKO belt dressing to dress approximately 350 sq. ft. of belting.

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GRATON & KNIGHT COMPANY • Worcester 4, Mass.
World's Largest Manufacturers of Industrial Leather Products

If you write maker identify as IEN-7950

SUB-MINIATURE CANNON PLUGS

tiny but rugged

Series D — the new sub-miniature Cannon Plugs have 15 contacts for #20 or #22 AWG stranded wire. Others in the series have 25, 37 and 50 contacts. These new plugs meet a long felt need of the Electronics Industry for a sturdy, versatile, and extremely compact connector for use on miniaturized equipment of all kinds. Junction shells make them useable as (1) rack and panel (2) box (3) wall, or (4) cord connectors.

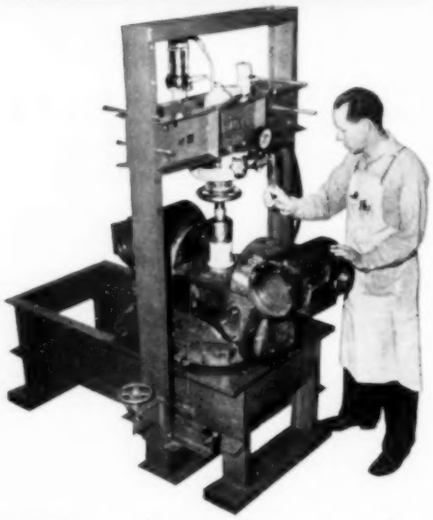
Contacts are machined from copper base alloy, gold plated, rated 5a. High dielectric insulators. Minimum flashover 1000 v. rms. Write for bulletin D-1.

CANNON ELECTRIC

SINCE 1915 — Factories in Los Angeles, Toronto, New Haven, Benton Harbor. Representatives in principal cities. Address inquiries to Cannon Electric Company, Dept. G-112, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, Calif.

If you write maker identify as IEN-7951

THIS Press can be moved over the work



DAKE Movable Frame Presses make awkward, hard-to-handle jobs easy

Here is the hydraulic press you need for work on awkward, heavy parts, and for handling large straightening jobs. Parts can be loaded on the work table with a hoist or fork truck—then the frame and workhead are centered over the job. The channels and workhead are easily raised or lowered if necessary to accommodate for work height.

DAKE Hydraulic Presses with movable frames are designed for hand, pneumatic, or electric operation. Capacities range from 25 to 300 tons. For detailed information, write for Bulletin 269.

In addition to conventional hand, air and electric hydraulic presses, Dake makes gap type, guided platen, and other special purpose presses.

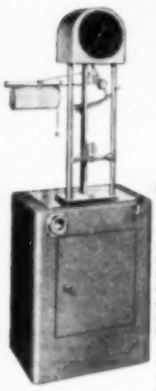
DAKE PRESSES

DAKE ENGINE COMPANY
614 Seventh St.
Grand Haven, Mich.

If you write maker identify as IEN - 7953

small COMPACT TESTER

large ACCURATE RANGE



DILLON

multi-low-range universal

TESTER

A portable laboratory instrument that is accurate to ½ of 1%. Tests paper, thread, fabrics, plastics, springs, film, cord, wire, leather, resins, adhesives, glass, wood, ceramics, felt, cardboard, bakelite, insulation and any other materials which fall within its range. Has 5 scales: 0-10, 0-25, 0-50, 0-100 or 0-300 lbs.

Stress-strain curve automatically recorded on graph sheets. Limit switch prevents overrun. Indicates load as it is applied. Accessories permit transverse, tensile, compression and shear testing easily and economically. Speeds from 0" to 20" per minute. The ultimate in fine testing equipment yet low in cost.

Write or wire for illustrated bulletin — Today

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If you write maker identify as IEN - 7954

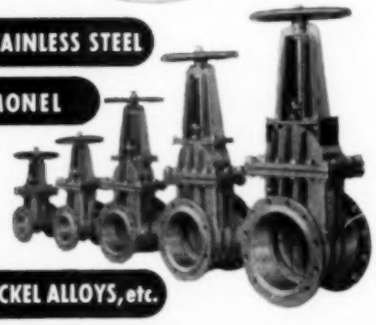
FABRICATED

FABRI-VALVE

ALLOY VALVES

STAINLESS STEEL

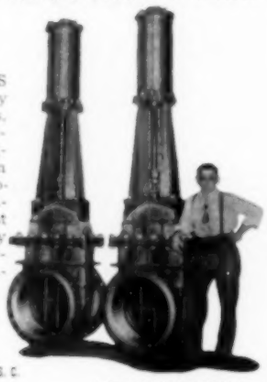
MONEL



NICKEL ALLOYS, etc.

USED IN THE PULP AND PAPER, MARINE, CHEMICAL AND PETROLEUM INDUSTRIES FOR CONTROL OF VARIOUS CORROSIVE LIQUIDS

FABRI-VALVES weigh considerably less than cast valves, making a large saving not only in original price but also in installation and shipping costs. Write inquiries to the nearest dealer or to factory for descriptive literature and further information.



AGENTS:

SOUTHERN CORPORATION, Charleston, S. C.

M. J. GIGY & ASSOCIATES, San Francisco, Cal.

JOHN B. ASTELL & CO., New York, N. Y.

NORTHWEST COPPER WORKS, Inc., Portland, Ore.

THOS. W. MacKAY & SON, Ltd., Vancouver, B. C.

CHANDLER BOYD CO., Pittsburgh 19, Penn.

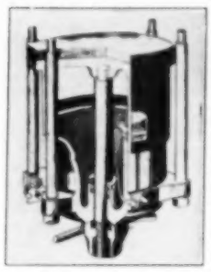
FABRI-VALVE CO. OF AMERICA

2100 N. Albina Ave., Portland 12, Oregon

If you write maker identify as IEN - 7956

PRESS TOOLS . . Die cushion, air operated, 0.9 to 10 ton ratings

Source: DAYTON ROGERS MFG. CO.
2822-26 - 13th Ave., S., Minneapolis 7, Minn.



Adjusts at bottom

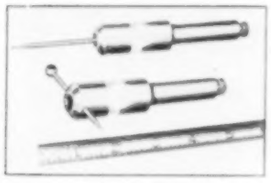
New design in the company's universal line of pneumatic die cushions now includes a hardened and ground pin-pressure pad mounted on the inverted reciprocating cylinder, chromium plating for the cylinder bore and arrangement of the cushion assembly so it can be mounted beneath a press bolster plate on the press itself. The latter mounting is recommended so the bolster plate can be removed without disturbing the cushion.

Seven sizes in the line employ pistons measuring 5 to 16 in. in diameter and draw capacity without a surge tank at 2 to 2½ inches. This draw capacity can be doubled in the 6 to 16-in. units by addition of a surge tank. Draw-ring holding pressure, based on 100-lb. air, is 0.9 to 10 ton. Overall dimensions are 5¾ to 17¼ in. front to back, 6¾ to 19 in. from right to left. Shipping weight ranges from 66 to 650 pounds.

If you write maker identify as IEN - 7957

CENTERING . . Electric wiggler signals upon making contact with work

Source: ART-MIL MACHINE & MFG. INC.
168-72 Hosack St., Columbus 7, Ohio



List is about $4

Miniature lamp and flashlight battery in the body of this new wiggler provide a signal when the contact stem in the head touches work that is being centered or located to a predetermined contact point in a slot or hole. Repeat accuracy is within 0.0001 in. for the new locating tool.

The tool also can be used to pick up dimensions by contact with a height gage and as a warning stop when close tolerance is required. The stem can be set in line with the axis or at right angles to it. Standard stems can be used.

Identify as IEN - 7958

Electronic hygrometer element, previously described IEN 4-51, is now being produced by Minneapolis Honeywell for installation in packing cases containing equipment and products that have been protected against corrosion by drying out the enclosure interior. The element connects from inside the enclosure to a receptacle mounted on the outside. A moisture meter plugs into this receptacle when the interior condition is to be checked. The element lists at about $5. It eliminates the need for costly container opening, reclosing and sealing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7959

Here's Magnetic Protection Against Tramp Iron At LOWEST POSSIBLE COST!

Chocolate going over Perma-Plate at rate of 10,000 lbs. hr. Magnet picks up various forms of iron filings.

Dings Perma-Plate Magnet

NON-ELECTRIC • PERMANENT • LIGHTWEIGHT

ABOLISH tramp iron threats to your machinery. Gain constant, permanent protection at low cost. The Dings Perma-Plate requires no electricity—no electrical accessories—no maintenance.

Easily installed in chutes, ducts, trays, spouts, over conveyor belts, etc., the powerful Perma-Plate gives you *maximum* tramp iron removal—gives you CERTIFIED magnetic strength, GUARANTEED magnetic permanence. Learn the details—SEND for BULLETIN.

DINGS MAGNETIC SEPARATOR COMPANY
4755 W. Electric Ave., Milwaukee, Wis.
All Types of Electric and Non-Electric Magnetic Separators for Every Purpose.

Dings Certified MAGNETIC STRENGTH

If you write maker identify as IEN - 7960

HOW TO IMPROVE YOUR PRODUCTS AT LOW COST

PERMACLAD

STAINLESS CLAD STEEL

ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

Over 125 Years of Iron and Steel Making Experience

Other Products: A-W ALGRIP Abrasive Floor Plate • A-W SUPER DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

If you write maker identify as IEN - 7961

instantaneous control

Only P&H Welders have this feature

for faster, easier, sounder welds on non-ferrous and "hard-to-weld" metals

No other welder has this Instantaneous Control feature. It lets you handle "hard-to-weld" metals with ease—aluminum, magnesium, brass, copper, stainless, high alloy, high and low carbon steels. Check these features:

- **P&H Dial-lectric Control** — No moving coils or cores to bind or freeze. Stabilizer is absolutely unstable.
- **Built-in high frequency unit** — eliminates additional external equipment. Variable frequency control.
- **Automatic gas and water control** — Pre-set automatic time delay control (2 seconds to 2 minutes) prevents electrode contamination, assures clean, sound welds.
- **Stepless amperage regulation** — from 10 amps to maximum. Three models available: ranges 20-300, 50-500 and 300-600 amps.
- **Unusual arc stability** — Makes good clean welds where extremely low amperages are required.
- **Selector switch** — gives operator instant choice of standard or high frequency unit.

No wonder P&H AC Welders are the choice of the aircraft industries where top quality work and speed are "musts". They join "hard-to-weld" metals faster and easier — eliminate rejects for you, too. Get full details from your P&H representative or write us for further information.

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P&H HARNISCHFEGER CORPORATION
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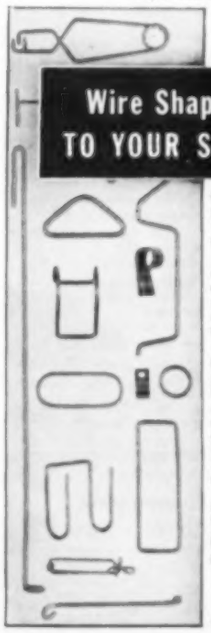
Power Shovels • Crawler and Truck Cranes • Overhead Cranes • Hoists • Arc Welders and Electrodes • Self Stabilizers • Diesel Engines • Pre Fabricated Homes

If you write maker identify as IEN - 7962



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● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION

(Formerly JESCHKE Wire and Specialty Company)

300 POSTON DRIVE

CRAWFORDSVILLE, INDIANA

If you write make identify as IEN - 7963

Investigate the Advantages of
H & K PERFORATIONS

—for cleaning, grading, straining and filtering . . . guarding and ventilating . . . acoustical treatment . . . ornamental enclosure, and related problems of product and machine design.

You have a wide selection of patterns to choose from, all accurately perforated. For commercial processing, perforations may be had with as close as ± .0005". Materials include practically all metals and sheet materials such as plastics, fabrikoids, plywood, etc. Ornamental grilles may still be furnished in steel with painted finishes.

Perforated sheets may be furnished rolled, formed, sheared, welded, brazed or otherwise fabricated to your specifications.

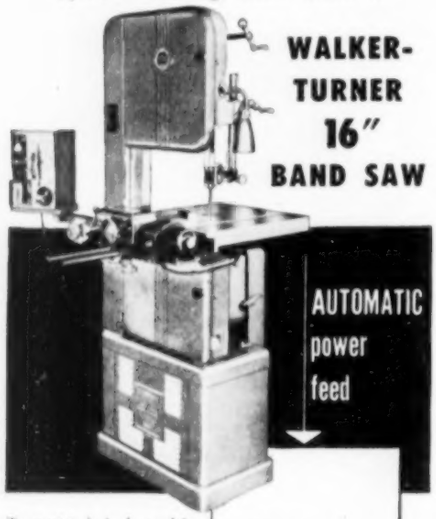
Catalog No. 62 tells the "hole" story —write for it!

The Harrington & King Perforating Co.
5637 FILLMORE STREET • CHICAGO 44, ILLINOIS
114 LIBERTY STREET • NEW YORK 6, NEW YORK

If you write make identify as IEN - 7964

Even unskilled operators can speed cutting time with a

WALKER-TURNER 16" BAND SAW



To meet today's demand for accurate and faster production, put the new Walker-Turner 16" Band Saw to work in your shop. Any operator, even unskilled labor, can quickly learn to handle these metal and woodworking machines. Built to simplify cutting operations, they're *fast, accurate, safe, easy to handle.*

The automatic Power Feed, a patented Walker-Turner feature, insures protection against overloading the blade—maintains a pre-set feeding pressure for sharper cutting—affords longer blade life.

Find out more about this practical way to increase output while reducing production costs.

Ask your distributor for full information about this and other Walker-Turner Power Tools for metal, plastic and woodworking operations. Or mail coupon today for complete catalog.

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NEW LITERATURE—Continued

RECTIFYING . . "Varicell" 15-amp 30-volt regulated dc power supply with ac input; schematic operating diagram, notes on control circuit. Bulletin V-1051, 4 pages. Superior Electric Co., 951 Demers Ave., Bristol, Conn. **IEN-0814**

RELAYS . . Standard control units, also latching, overload, sealed, telephone, midget, coaxial relays; descriptions and ratings. Catalog, 40 pages. Advance Electric & Relay Co., 2433-37 N. Naomi St., Burbank, Calif. **IEN-0815**

SANDING . . Pneumatic tools with reciprocating motion; selection data on four models, picture uses from burring to die polishing. Bulletin 2100, 6 pages. Sundstrand Machine Tool Co., 2529-33 Eleventh St., Rockford, Ill. **IEN-0816**

SHEARING . . "Guillotine" portable hydraulic tools to cut bar, cable, chain, wire rope; models, ratings, hand and power actuators, accessories. Catalog 152, 8 pages. Manco Mfg. Co., Grove and West Sts., Bradley, Ill. **IEN-0817**

SHEARING . . Pneumatic-operated squaring shears, 3 to 10 ft. capacity, 16 to 18-gage mild steel; specifications, construction. Bulletin 87-A, 4 pages. Niagara Machine & Tool Works, 639-95 Northland Ave., Buffalo 11, N. Y. **IEN-0818**

SIGNS . . Bulletin boards, directory and outdoor boards; illustrated types and sizes, construction, letters. Catalog SW-52, 8 pages. Acme Bulletin and Directory Board Corp., 37 E. 12th St., 4th Floor, New York 3, N. Y. **IEN-0819**

SPRAYING . . Tank-mounted compressor for portable use in spraying whitewash, insecticides, weed killers; specifications, uses. "Tiger Sprayer," 4 pages. Evans Orchard Supply Co., 306-7 Delaware St., Kansas City 6, Mo. **IEN-0820**

STRAPPING . . Methods of using steel strapping in packaging for shipment; picture examples, tools and equipment, accessories. Pocket Catalog 15, 40 pages. Signode Steel Strapping Co., 2630 N. Western Ave., Chicago 47, Ill. **IEN-0821**

SWITCHES . . Lever key switches, also turn and push types; signal lamps, jacks, plugs; descriptions, contact arrangements, ratings. Catalog 4018-C, 32 pages. Automatic Electric Co., 1031 W. Van Buren St., Chicago 7, Ill. **IEN-0822**

TESTING . . Gage to measure dry thickness of non-conductive coatings and an attachment to measure hardness; description, instructions. Bulletin 110, 4 pages. Henry A. Gardner Laboratory, 4725 Elm St., Bethesda 14, Md. **IEN-0823**

TESTING . . Infra-red analyzer-recorder for constituents of gases and liquids; schematic diagram, operation, applications. Bulletin 0705-1, 4 pages. Mine Safety Appliances Co., 21 Braddock Ave., Pittsburgh 8, Pa. **IEN-0824**

TRUCK ATTACHMENTS . . For company's power trucks; size and capacity data on grabs, extension forks, aprons, rams, also accessories. Catalog 1200, 24 pages. Hyster Co., 2916 N. E. Clackamas St., Portland 8, Ore. **IEN-0825**

TRUCK ATTACHMENTS . . Fork extensions and a slide shifter for company's fork lift truck; standard sizes, dimensions, ratings. Leaflets AD-4 and AD-11, 2 pages each. Towmotor Corp., 1224-28 E. 152nd, Cleveland 10, Ohio. **IEN-0826**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 7966

Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the cork-like action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

ME 152-A

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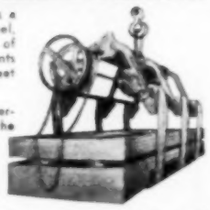
JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write make identify as IEN - 7967

Wide or Narrow...

1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.



Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

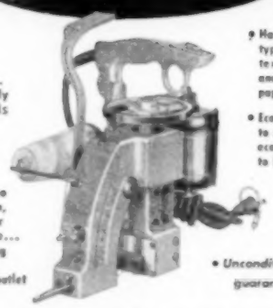
CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write make identify as IEN - 7968

CUT CLOSING COSTS!

with the Economical Efficient...

FISCHBEIN *Portable* BAG CLOSER



• Entirely portable... weighs only 10½ pounds
• Handles all types of textile bags and most paper bags
• Economical to use... economical to buy!
• Requires no installation, supports or plant space... merely plug into any electrical outlet
• Unconditionally guaranteed!

Lightweight, practical, handy, easy to operate! Efficiency and reliability proved by over 4000 users in every part of the world under varying operating conditions. For details on how you can cut YOUR Bag Closing costs with the FISCHBEIN *Portable* BAG CLOSER . . . write:

DAVE FISCHBEIN CO.
Industrial Sewing Machinery
DEPT. 4C • 38 GLENWOOD AVE., MINNEAPOLIS 3, MINN.

If you write maker identify as IEN-7970

Electronic Temperature Control

...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

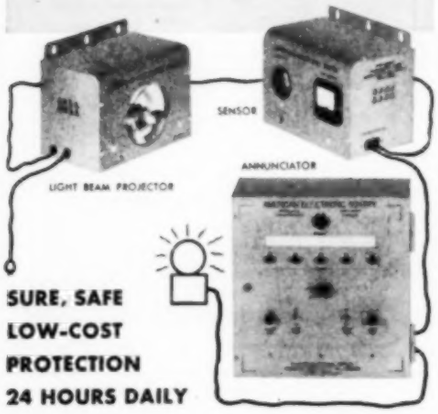
Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Alnor — PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN-7971

You Can Spot FIRE

BEFORE IT REALLY GETS STARTED with NEW ELECTRONIC DETECTOR!



SURE, SAFE LOW-COST PROTECTION 24 HOURS DAILY

You can spot fires without delay with the American Electronic Sentry providing automatic fire detection. The first wisp of smoke across the light beam flashes the alarm . . . warns of fire before the sprinkler heads go into action. This new alarm system virtually ends the danger of destructive fires in warehouses, hospitals, schools and factories.

AUTOMATIC IN USE . . . EASY TO INSTALL

The American Electronic Sentry System "watches" an area about 150 ft. x 30 ft. with each pair of Light-Beam Projector and photo-electric Sensor. Additional pairs cover larger areas.

Smoke is "reported" to an Annunciator Panel which may be located nearby, or up to 2 miles away, connected by inexpensive wiring. The signalling device may be horn, bell, siren or light located where most useful. Current consumption is low, about 50 watts a unit.

NO "ACCIDENTAL" FAILURES

The Projector has a built-in supervisory circuit to warn of failures. Automatic voltage regulation. Any power interruption sets off alarm.

WRITE FOR FULL DETAILS Full information on the American Electronic Sentry may be obtained promptly and without obligation by writing to...

Approved By Factory Mutual Laboratories

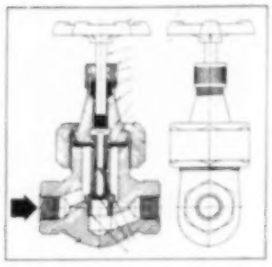
FM

ELECTRONICS DIVISION
AMERICAN ENCAUSTIC TILING CO., INC.
901 Kenilworth Ave., Lansdale, Pennsylvania

If you write maker identify as IEN-7973

VALVE . . Bellows sealed globe, ¼ to 2 in., pressure to 900 pounds

Source: ASSOCIATED VALVE & ENGINEERING CO. 1150-2 W. Marquette Road, Chicago 21, Ill.



Threaded ends are standard

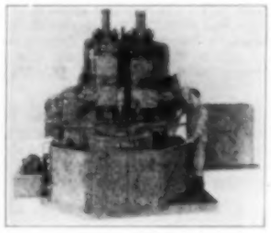
The stem packing in this new Series-1129 globe valve is for emergency purposes only. In normal operation the stem is sealed by a metal bellows that surrounds it and connects between the sealing plug and a metal gasket clamped between the body and the bonnet. The stem rotates inside the bellows. It is fitted with a lifting washer that will draw the plug from the seat if the bellows breaks.

The valve is designed to handle liquid or vapor at temperatures to 900 deg. F. It is made with a forged-steel body, stainless-steel bellows, seat and plug. A Stellite seat can be specified. The valve is available for hand operation or to apply in connection with a diaphragm, solenoid, electric motor or operating cylinder as the installation requires.

If you write maker identify as IEN-7974

BORING . . Vertical machine has 36-inch table, automatic cycle

Source: EX-CELL-O CORP. 1202 Oakman Blvd., Detroit 32, Mich.



Details on request

Preliminary data has been released by the company on its new style-425 automatic vertical machine for precision boring, turning, facing. Parallel tool slides are counterweighted and operated by hydraulic cylinders. Each vertical slide carries a cross-slide also hydraulicaly operated. The spindle is mounted on 24-in. tapered roller bearings and is worm driven for a range of speeds to 500 rpm.

Identify as IEN-7975

Plastic molds made of Geon resin are being used by a Newark manufacturer to form various phenolic and polyester parts on orders where limited quantities of the parts are needed and initial expense must be held down. About 50 phenolic parts can be made in one of the molds. From 10 to 50 polyester parts can be cast before breakdown occurs. After a mold has been made the parts are produced by pouring the liquid casting material and then putting the filled mold into an oven operating at about 160 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7976

Is your washing machine cleaning brass, aluminum and zinc die castings as well as it cleans steel? Do the nozzles clog too often? Is there too much foaming?

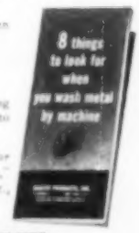
Oakite has developed cleaning materials that meet every requirement for washing metal in every type of machine.

You'll want to read the Oakite booklet on washing by machine—16 pages of suggestions like:

¶ How to select the best detergent. When to use a solvent. When to use alkali. *See pages 4 to 8.*

¶ How to prepare metal for painting. *See page 9.*

¶ Tips on selecting and operating washing machines. Special instrument aids to better operation. *See pages 40 to 43.*



FREE For a copy of *"8 things to look for when you wash metal by machine,"* write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

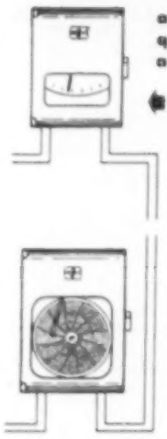
OAKITE

Specialized Industrial Cleaning · Materials · Methods · Service

Technical Service Representatives in Principal Cities of U. S. & Canada

If you write maker identify as IEN-7977

How to Shorten Distances in a Plant



and improve production and quality by remote measurement and control

MEASURE HERE

Bristol Metameter* telemetering transmitter at a remote location measures pressure, flow, level, temperature, voltage, current or power.

TRANSMIT ANY DISTANCE

—a few feet or many miles—by telephone circuits, private wires, carrier-current channels, radio (including microwave).

RECORD HERE

Bristol Metameter telemetering receiver at central point, records or indicates measurement made by the transmitter.

BRISTOL Write us for Bulletin M1700. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

*Reg. U. S. Pat. Off.

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN-7978

IF YOU WORK WITH PLATE YOU NEED A STEELWELD PRESS

If you work with metal in any thickness from 12 gauge to one inch most likely a Steelweld Press would prove helpful and profitable to you.

Steelwelds are versatile tools that do bending, forming, drawing, punching, etc. quickly with simple, easily set dies.

Send for free copy of catalog No. 2010

THE CLEVELAND CRANE & ENGINEERING CO.
4238 East 281st St., Wickliffe, Ohio

STEELWELD PRESSES

If you write maker identify as IEN-7979

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Minimum Sizes 3" diameter and 3" face length

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48

Most complete publication of its kind

Industrial Roll Division

RODNEY HUNT MACHINE CO.
273 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

If you write maker identify as IEN-7980

Blue Devil SOCKET SCREW PRODUCTS

a good line to remember! always call "SAFETY" FIRST!

for all socket screw products

Top quality and unlimited selection are by-words with Safety Socket Screw—exclusive specialists in socket screw products. For every requirement—heavy machinery to precision instruments—call for "Safety-first."

Sold through authorized Industrial Distributors

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN-7981

ONCE IT TOOK 2 MEN

NOW IT ONLY TAKES 1

with the RAYMOND Hydraulic PALLET LIFT TRUCK

One man handles 3-ton loads with ease using this RAYMOND Hydraulic Pallet Lift Truck! Why — because hydraulic power, not the operator, does the lifting. A few pumps on the foot pedal and even heaviest loads are ready for hauling.

MODEL L4P

RAYMOND Pallet Trucks help out on short hauls and during peak periods—release your power trucks for long hauls and tiering.

These rugged trucks are highly maneuverable, feature fingertip lowering, come in 4,000 or 6,000 lb. capacities. Available also in Lightweight 2,000 lb. capacity model.

FAST MOVER!

That's this RAYMOND Low-Lift Rider-Type Electric Truck. It travels up to 6 mph empty and 5 mph loaded — speeds up long hauls, stock picking, loading, unloading. Capacity: 4,000 lbs.

MODEL EL4F

SEND TODAY

The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3578 Madison St., Greene, N.Y.

Gentlemen: Please send me Bulletin 287, describing your complete line of Hydraulic Lift Trucks. Also Bulletin 750, showing your new Low-Lift Electric Truck.

NAME TITLE
COMPANY
STREET
CITY STATE

NEW LITERATURE—Concluded

TUBE FITTINGS . . Plugs and caps to seal hydraulic tube ends and threaded openings; notes on stamped design, sizes, list prices. Catalog, 6 pages. Tubing Seal Cap Inc., 2808-12 E. 11th St., Los Angeles 23, Calif. **IEN-0827**

TUBES . . Flexible metal tube in open or close-pitch corrugations; construction points, typical uses, ratings on eight sizes ¼ to 2 in. id. "FlexWeld," 4 pages. U. S. Flexible Tubing Co., 219-23 Main St., Bartlett, Ill. **IEN-0828**

TUMBLING . . Materials to use with abrasives or other media to burr, clean, polish metal parts; properties, application data. Catalog, 5 sheets. Blue Magic Chemical Specialties Co., 2137 Margaret St., Philadelphia 24, Pa. **IEN-0829**

VALVES . . "Hi-Cyclic" operating valves for pneumatic power cylinders; data on hand and solenoid-actuated models, cut-away view, operation. Bulletin 10-A, 8 pages. Beckett-Harcum Co., 1138-42 Wayne Rd., Wilmington, Ohio **IEN-0830**

VALVES . . Pneumatic operating valves, 3 and 4-way types, ¼ to 1 in.; drawings and data on hand, foot, cam, power-operated units. Catalog 303, 12 pages. Rivett Lathe & Grinder, Inc., 20-24 Riverview Road, Brighton 35, Mass. **IEN-0831**

VISES . . "Tool Room" vise with square frame 2 in. high and 5⅝ in. opening for machine use; description, specifications. Bulletin TE 2-103, 2 pages. Products Machine Co., 188-92 Housatonic Ave., Bridgeport 1, Conn. **IEN-0832**

VISES . . Bench, pipe and machine types; illustrated descriptions and list prices, also "Powrarm" positioners for work assembly and repair. Catalog 108-E, 32 pages. Wilton Tool Mfg. Co., 927-39 Wrightwood, Chicago 14, Ill. **IEN-0833**

WATER TREATING . . Zeolite softeners; operating description, sectional views of equipment involved, details on the control valve. Bulletin 4520-A, 32 pages. Cochrane Corp., 3132 N. 17th St., Philadelphia 32, Pa. **IEN-0834**

WEIGHING . . "Shadowgraph" laboratory balances in which readings appear on a frosted glass dial; models, ranges, examples of use. Bulletin 3270, 4 pages. Exact Weight Scale Co., 942-46 W. Fifth Ave., Columbus 8, Ohio **IEN-0835**

WEIGHING . . Scales in 1,000 sizes from 1/64 oz. to 400 ton; condensed specifications on platform, track, counting, predetermining, other types. Catalog II, 28 pages. Howe Scale Co., 1041 Strongs Ave., Rutland, Vt. **IEN-0836**

WELDING . . Mild steel, low alloy and special-purpose electrodes; selection chart, properties, sizes, application data on 34 types. "Welding of Mild Steels," 48 pages. McKay Co., 310 McKay Bldg., Pittsburgh 22, Pa. **IEN-0837**

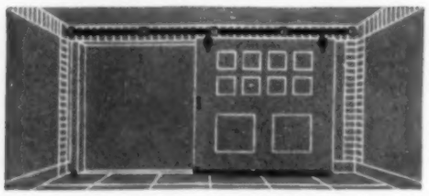
WELDING . . Flux for arc or torch welding of alloy steels; properties, application instructions, selection chart on four types. Pocket booklet, 16 pages. Solar Aircraft Co., 2202 Pacific Highway, San Diego 12, Calif. **IEN-0838**

WRENCHES . . Impact type for 180 and 360-cycle ac. operation; types, ratings, accessories, also drills, screwdrivers, grinders. Catalog 5111, 36 pages. Ingersoll-Rand Co., 11 Broadway, Dept. NK, New York 4, N. Y. **IEN-0839**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7983

COBURN
SLIDING DOOR HARDWARE



. . . LOW INSTALLATION COST
. . . SMOOTH, EASY OPERATION
. . . LONG, TROUBLE-FREE LIFE
. . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION

If you write maker identify as IEN-7984

You can't re-build Sheldon Efficiency into an old lathe . . .

This practice of re-building obsolete machine basis is just poor business. You just can't re-build the accuracy, speed, convenience, and production capacity of a modern space saving Sheldon Precision Lathe into the cumbersome shell of an old lathe of obsolete design.

First, you would have to build in "Zero Precision" Timken Roller Bearings—there are no other bearings as accurate. You would have to bore a 1¼" hole thru the spindle to get Sheldon's capacity, and hold run-out accuracy within 0 to .0003". You would have to re-grind and scrape bed ways within tolerances of .001" per ft., and hold traverse ways and parallel alignment within .005"; and replace your lead screw with one cut on the latest Pratt & Whitney thread miller, etc. Thru Sheldon's 1X accuracy tolerances . . . and still you would not have the efficiency of a fast, convenient, space-saving and power-saving Sheldon Precision Lathe, which you can buy today from your tool distributor, fully assembled and ready for work. Don't re-build, replace for efficiency! Write for Catalog

SHELDON
CHICAGO U.S.A.
Sheldon Machine Co. Inc., 4208 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN-7985

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties

- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets—in a wide range of sizes and specifications—may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

If you write maker identify as IEN-7986

Pratt & Whitney Carbide Hole Finishing Burs are precision ground on special machines to provide the accurate flute spacing, uniform rake angle and exact balance essential for efficient cutting at high speeds. Tolerances: concentricity .0005" (max.); cutting sides parallel within .0002".

Comprehensive stocks of all P & W Carbide and High Speed Steel Burs are maintained at Pratt & Whitney Branch Offices. Request literature on your Company letterhead.

First Choice for Accuracy

PRATT & WHITNEY
DIVISION NILES-BEMENT-POND COMPANY
WEST HARTFORD 1, CONNECTICUT, U. S. A.
BRANCH OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN-7987

• Meet today's tough production schedules "right off the shelf" with OHIO Gears and Speed Reducers. One glance through the pages of an Ohio Gear catalog and you immediately find ways to cut the cost and improve your product.

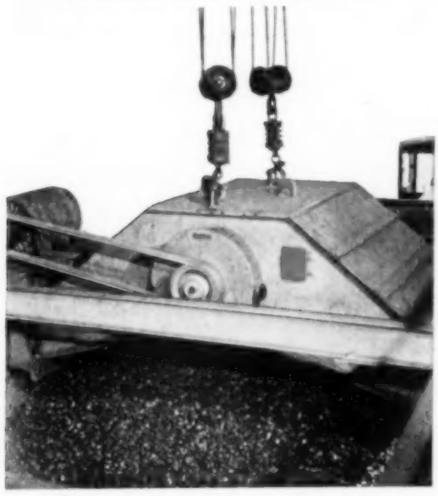
Take advantage of Ohio Gear's years of engineering experience in every type of gear and speed reducer, the choice of thousands of engineers for the design and maintenance of power transmission equipment — Ohio Gear is prepared to meet your most difficult requirements. Call your nearest distributor or write direct.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
1345 EAST 179th STREET • CLEVELAND 18, OHIO

OHIO GEARS

If you write maker identify as IEN-7988

How long can U.S. Rubber V-belts take this shock treatment?



Working on a coal car shaker is probably one of the worst shock loads V-belts are called upon to take. With every revolution they must transmit the power to shake a loaded coal car with sufficient force to loosen tons of packed or frozen coal. Yet this matched set of "U.S." Rainbow V-belts has been working steadily on this shaker for more than 10 months. Previously, three other brands of belts had lasted an average of three weeks apiece. Moreover, the "U.S." belts never jump the pulleys as did the other brands that were tried.

Installing "U.S." V-belts always results in extra operating profit because "U.S." belts are built to handle *extra-rugged* conditions. They have the unique Equa-Tensil Cord Section—a development which makes certain that each cord pulls its *full* share of the load. For more information, write to address below.

Two views of drive of coal car shaker. This shaker handles over 30 cars a day, is equipped with a matched set of three C-144 super-service V-belts.

Product of

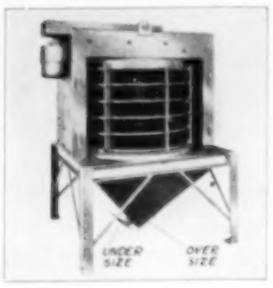
U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN-7990

SEPARATING . . Centrifugal screen to handle both wet and dry materials

Source: NORDBERG MFG. CO.
3071-75 S. Chase Ave., Milwaukee 7, Wis.



Effective on light materials

Cylindrical screen in this new Symons-V machine is mounted to rotate on a vertical axis around a cupped feed plate equipped with radial vanes that are set a little below the upper edge. Material to be screened enters through an opening in the top of the housing and is impinged by the feed plate against the inner surface. Oversize particles are held against the screen for a brief interval while the fines pass through.

Gyratory action combined with the drum rotation alternately produces an inward deflection of the material to free the holes in the screening surface for the passage of undersize at the next contact and to permit the material to drop a short distance. This process is repeated until each particle either goes through the screen or is discharged as oversize.

When the material and the screen are in contact both move in the same direction at the same speed so wear on the cloth is minimized. Water sprays are mounted in the lower assembly with the sprays impinging upward for use in wet operation. The machine is built at present in one size with the screen measuring 3 ft. in height by 12 ft. in circumference to provide 36 sq. ft. of screening surface. It is enclosed while in operation so dust cannot escape. Fine and coarse materials are delivered through separate outlets in the hopper bottom. Floor space measures about 67 by 67 inches.

If you write maker identify as IEN-7991

RHEOSTAT . . Switch controlled for specified current regulation

Source: BELKE MFG. CO.
941-45 N. Cicero Ave., Chicago 51, Ill.

Meters show adjustment

Helical coils of nickel-chromium resistance wire are mounted vertically back of the front panel in this new rheostat. The coils are wired into rotary wiping-contact switches mounted on the panel. These switches permit current adjustment in small steps and larger increments for an overall specified range. The new equipment can be supplied for steps ranging from ¼ to 5 amp. on the fine adjustment side. The housing is open at the top and bottom to provide for air flow.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN-7992

for IMMEDIATE DELIVERY

on these

AMSCO welding products

Contact your AMSCO Distributor.

Amsco AW-79 for Automatic Hardfacing. This new alloy is now available. 5/32" and 3/16" in 22½" ID, 100 lb. coils.

The following Amsco rods are ready for prompt delivery in all diameters, bare and coated.

• Amsco No. 459 • Amsco No. 217 • Amsco No. 6 • Amsco No. 1 • Formface • Chromeface • Air-Hardening

Rods below are available in all diameters, *coated only:*

• Amsco HF-40 • Amsco HF-60 • Amsco Co-Mang

Tungsten Carbide, V-Mang, and Tri-Face are also available. Amsco Deowld can be supplied in all diameters except 5/32", bare and coated. In addition, Carbon Steel Grousers, CS-1 and CS-2 are available now.

A complete line of manganese steel digger tooth repointer bars and other shapes are available with reasonable delivery dates.

For complete technical details on Amsco Rods, ask your dealer for a copy of Bulletin 650-W.

AMERICAN Brake Shoe COMPANY
AMERICAN MANGANESE STEEL DIVISION
403 EAST 34th STREET • CHICAGO HEIGHTS, ILL.

Other Plants: New Castle, Del., Denver, Oakland, Cal., Los Angeles, St. Louis. In Canada: Joliette Steel Division, Joliette, Que. Amsco Welding Products distributed in Canada by Canadian Liquid Air Co., Ltd.

If you write maker identify as IEN-7993

ENGRAVE

PANELS OF ANY DIMENSIONS
IN YOUR OWN SHOP
with the Engravo

The only portable machine which reproduces 15 sizes from one master alphabet.

The only one with adjustable copy holding slides for multi-line engraving in one set-up.

Self-centering holding vise for nameplates.

Send for Booklets
I-S—23 portable model • H—23 heavy duty model

NEW HERMES, Inc. 13-19 University Place, N.Y. 3
In Canada: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

If you write maker identify as IEN-7994

Industrial Trucks Easily Serviced on a GLOBE Lift

A Globe Industrial Truck Service Lift raises electric or gasoline-driven industrial trucks to give full accessibility to underneath parts. Inspection, lubrication, and servicing is speeded to save substantially on time and labor. Available in either single or 2-post models.

GIVE YOUR BUSINESS A LIFT!

If you have a lifting problem, solve it with a Globe Lift. Write for valuable data on Self-Leveling Ramps, Machine Feeding Lifts, Loading Dock Lifts, Ramp Eliminators, Production Lifts, etc. Ask for Bulletin IE419.

GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Phila. 18, Pa.
Factories at Des Moines, Iowa, and Philadelphia, Pa.

If you write maker identify as IEN-7995

CALL

Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

RYERSON

PRINCIPAL PRODUCTS:
Bars • Structurals • Plates • Sheets • Tubing
Allegheny Stainless • Alloy Steel
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Metal Working Machinery & Tools, etc.

FOR STEEL

JOSEPH T. RYERSON & SON, Inc.
Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Seattle, Spokane, Los Angeles, San Francisco

If you write maker identify as IEN - 7996

Pump Materials DIRECT From Original Containers!

Alemite Versatal Equipment allows fast, easy handling of liquids and semi-solids ... from paint to putty.

• Air operated Versatal Pumps dispense materials directly from original bulk drums.

• Hydraulic pressures deliver materials through as much as 1000 feet of hose or pipe.

FREE a book of ideas on how Alemite Versatal Equipment can help solve your material handling problems. Address your request to Alemite, Dept. K-72, 1850 Diversey Parkway, Chicago 14, Ill.

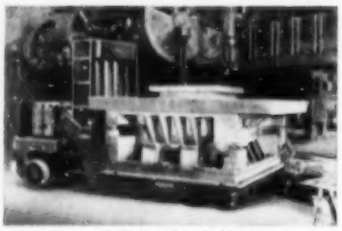
ALEMITE Versatal SPEEDY PUMP EQUIPMENT

A PRODUCT OF SW STEWART WARNER

If you write maker identify as IEN - 7997

B.F.Goodrich

Waste disposal?



Hauling extra-heavy loads?

Where do you use industrial tires?

Here's how

T&W ANALYSIS

can cut your costs

● We have a plan that is saving up to 50% on tire and wheel costs for industrial tire users. It's called the Tire & Wheel Analysis Plan. It's applicable no matter what your usage of industrial tires. On request and without charge, a man who knows industrial tire problems looks over your operations, analyzes your particular needs. Then he makes maintenance and service recommendations. He also recommends the exact type, size, tread design and tread compound which best suits your operations. He shows you how to save through retreading. Remember his recommendations are impartial because B. F. Goodrich makes *all* types and kinds of industrial tires. The BFG man has no axe to grind for just one or two particular types. He has them all.

See your nearby B. F. Goodrich Dealer for your immediate industrial tire needs. For additional information on the B. F. Goodrich Tire & Wheel Analysis Plan, use the attached coupon. A similar plan is available for manufacturers of industrial handling equipment.

The B. F. Goodrich Co.
Department TW-182
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name_____

Title_____

Company_____

City_____ State_____

B.F.Goodrich

If you write maker identify as IEN - 7999

COMMUNICATING . . Telephones connect to central dictation recorder

Source: GRAY MFG. CO.
521 Fifth Ave., 4th Floor, New York 17, N. Y.

One recorder serves several users

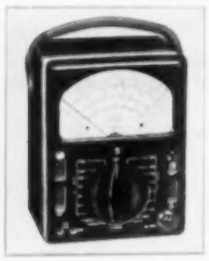
PhonAudograph trade names a new assembly of several telephones and the company's Audograph electronic dictating equipment, previously described IEN-10779-46. The dictating equipment is located at a central point with a transcriber, a secretary and her typewriter. The telephones are distributed through a plant and office so various individuals can call in their dictation to the central machine. The secretary changes the discs on the recorder and types the dictation for all of the individuals in the group served by the installation.

Each telephone is equipped with an indicator light and push buttons to show when the line is busy or open for use and to provide a means to control the recorder action to listen back, to make corrections and to talk with the secretary.

If you write maker identify as IEN - 8000

METER . . Electronic instrument for voltage and resistance readings

Source: TRIPLETT ELECTRICAL INSTRUMENT CO.
11-15 Harmon Drive, Bluffton, Ohio



Portable design

Model 650 is a new vacuum-tube voltmeter for application in a frequency range between 20 cycles and 110 mc. with a single probe. A main selector switch controls the various ranges. The instrument provides a 1-volt full-scale reading on both ac. and dc. High input impedance of 11 megohms on dc. provides for accurate measurements without loading the circuit under test. Precision composition resistors are used. Separate one and five-volt ac. scales are included.

Identify as IEN - 8001

Radio-telephone equipment to equip a 151-man patrol force for civil defense over New York City's water-supply installation has been produced by General Electric Company. The equipment outfits 24 radio-equipped jeeps to maintain around-the-clock watch over the city's 1,000 square miles of watershed area. The jeeps can communicate with each other and with any of nine stations and 46 mobile units in the area.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8002

THE INTERNATIONAL BOXER

PORTABLE STAPLE MACHINE . . . The "Boxer" is a knockout for stapling corrugated or fibre containers. Lightweight (only 4 lbs., 10 oz.) and small (16x3½x7"), it uses the revolutionary International Retractable Anvil . . . stapling filled cartons from the outside. Close your cartons faster . . . neater . . . with fewer staples per unit area, and at less cost per carton.

Write for bulletin No. 101 on the "Boxer." For large daily volume ask about the large automatic Internationals.

INTERNATIONAL STAPLE & MACHINE CO. 605 E. HERRIN ST. HERRIN, ILLINOIS

If you write maker identify as IEN - 8003

SAFETYMIX

EXTRA SHOWER SAFETY ... at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

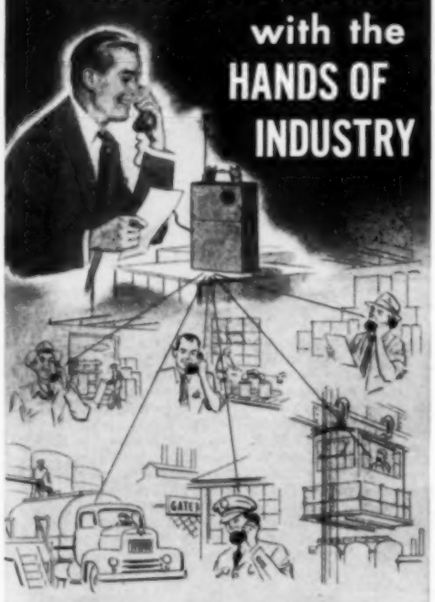
Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN - 8004

hellicrafters

littlefone

LINKS THE BRAINS with the HANDS OF INDUSTRY



Speed production, cut costs, improve the product, increase safety—these are measurable benefits of the Littlefone! Only 9½ to 14 pounds in weight, these portable 2-way FM radiophones can be a "miniature radio network" linking all your key men—on the move or at a desk. It has solved production bottlenecks in hundreds of industries and businesses. Write today for specifications.

hellicrafters
DEPARTMENT L-IE, CHICAGO 24
WORLD'S LEADING MANUFACTURER OF PRECISION RADIO & TELEVISION

If you write mater identify as IEN-8006

Waste Hours...or Work Hours in Your Plant?

Why Overwork Three Men This Way . . .

When One Man Does It Easier This Way

CUT MATERIALS HANDLING COSTS 50% OR MORE!

Year after year, more and more companies have come to learn that Automatic "101" TRANSPORTERS cut their materials handling costs as much as 50% or more, while adding valuable man-power in man-hours saved.

"101" TRANSPORTERS are sturdy, too. To our knowledge every TRANSPORTER manufactured is still in service . . . and tens of thousands have been built.

FREE PROOF in Your Own Plant

to prove you can add man-hours without increasing workload of personnel!

But don't take our word for it! Put a "101" Transporter to the test . . . put it over the severest hauling hurdles in your own plant, absolutely free and without obligation! Write today and we'll arrange for your 5 days' trial. First come, first served. No obligation to buy . . . no strings attached.

"101" Transporter A PRODUCT OF AUTOMATIC

Trade Marks Reg.

Automatic 109 W. 87th Street, Dept. N-3, Chicago 20, Illinois

If you write mater identify as IEN-8007

You can't beat a soldered connection for electrical conductivity and permanence!

SOLDERED connections eliminate loss of current, fire hazard, radio interference and excess heat which result from loose, corroded, arcing NON-SOLDERED connections.

For over 50 years experts have specified American Beauty Electric Soldering Irons. They know American Beauty Irons are built to LAST LONGER, OPERATE DEPENDABLY and BE SERVICED QUICKLY.

Build better with solder . . . Solder better with American Beauty SOLDERING IRONS

WRITE FOR FREE LITERATURE

Dependable • Durable • Efficient

SINCE 1894

AMERICAN ELECTRICAL HEATER COMPANY

DETROIT 2, MICHIGAN

If you write mater identify as IEN-8009

ELEVATOR . . Portable electric, lifts 1/2 ton load to 60 in. above floor

Source: LANGLEY CORP. 950 Cambridge St., Cambridge 39, Mass.

About $600

Model C is a new assembly in the company's Powerlift line of portable power elevators. It is equipped with a ½-hp. reversing type motor, chain hoist and drum type controller with elevator type brakes. The chain connects to the 24 by 24-in. load platform to raise and lower it at 17 fpm. Limit stops prevent over-travel. Overall dimensions are 37 by 32 by 81 inches. Lowered position of the platform is 6 in. above the floor. Operation is on 110-volt 60-cycle single-phase ac.

A companion unit employs two 6-volt storage batteries in parallel to operate an electric-hydraulic drive to raise and lower the platform at 11 fpm. The platform and overall dimensions as well as lift height of this unit are the same as for Model C described above.

If you write mater identify as IEN-8010

CHUCK . . Replacement parts for company's key operated drill chuck

Source: SUPREME PRODUCTS CO. 2220-24 S. Calumet Ave., Chicago 16, Ill.

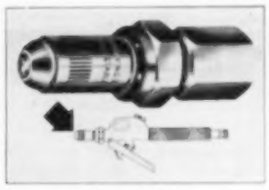
Parts are made of alloy steel

The company announces availability for field replacement of jaw and nut assemblies, sleeves, and extra keys for its Supreme drill chuck previously described IEN-9885-50. The parts can be applied to worn chucks in service to bring them back to the equivalent of new chucks providing the bodies are not worn or battered. Chuck sizes range from ¼ to ½ inch. List price, new, is about $5 to $7.

If you write mater identify as IEN-8011

SPRAYING . . Nozzle tip adjusts from solid stream to spray

Source: SPRAYING SYSTEMS CO. 3208 Randolph St., Bellwood, Ill.



For pest control

ConeJet trade names a new adjustable brass tip for application on the company's TeeJet or its Trigger TeeJet spray nozzle body. The tip is designed to handle insecticides, fungicides as well as water. Capacity, depending upon pressure, ranges from 1 to 112 gal. per hour. Adjustment is by rotating the knurled body of the tip. Maximum range is through 180 degrees.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write mater identify as IEN-8012

RETORT COKE WANTED

Manufacturer is in the market for a continuous supply of retort coke as formed on the upper walls and crowns of retorts or cells by the decomposition of heavy hydrocarbon vapors.

This material is usually quite dense and gray in color and can be segregated from the coal coke or removed from the cells at intervals. Highest prices paid.

Write or wire stating approximate quantities available.

BOX 1952
Industrial Equipment News
461 Eighth Ave., New York 1, N. Y.

If you write mater identify as IEN-8013

DEBURRING Made Easy!

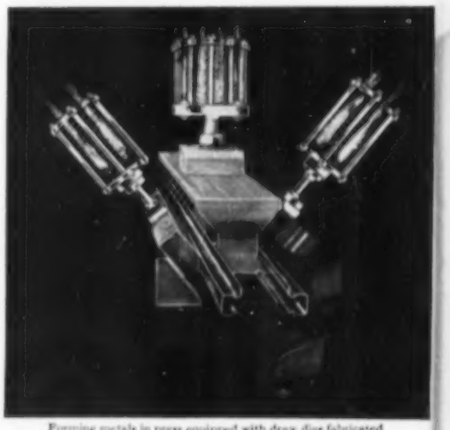
FLEXIBLE PLATEN CONTACT CONTOUR INSIDE

WRITE FOR ABRASIVE BELT GRINDER-POLISHER CATALOG

Hammond Machinery Builders

1607 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

If you write mater identify as IEN-8014



Forming metals in press equipped with draw dies fabricated from Formica "Gauge-wood."

NEW TOOLS FOR METAL FORMING

There's a new source of tools for the metal working industries—*densified wood*, product of the union of wood and BAKELITE Phenolic Resins. Aircraft part templates, bearings, automotive part dimension gauges, drill jigs, and foundry patterns are already being made from this unusual material. Its advantages—high impact strength, comparatively light weight, ease of repair, and economy.

Densified wood, in the form known as Formica "Gauge-wood," is made into tools that maintain their exact size and shape under variable conditions of heat and moisture. It is dimensionally stable, resistant to water, chemical attack, abrasion and warping. It can be bored, threaded, tapered, grooved or machined to close tolerances, then buffed to a high surface luster. It may be altered or repaired quickly and economically by patching.

Selected cross-laminated veneers are impregnated with BAKELITE Phenolic Resins and pressed to 50% of the original thickness to form densified wood, making it a hard, compact, wood-resin structure. Harder than any solid wood, lighter than any solid metal, it is well suited to jobs requiring strength, stability, and accuracy. It may be useful in your operations. For information, write Dept. DZ-14, requesting a copy of booklet H-12, "Densified Wood Made with BAKELITE Phenolic Resins."

BAKELITE TRADE MARK PHENOLIC RESINS

TRADE MARK

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company (Canada) Ltd., Belleville, Ont.

If you write maker identify as IEN-8016

The new Bellows HAN-D-AIR CLAMP is a spring return, single acting miniature air cylinder. 1⅛" bore develops 100 lbs. of pressure at 100 lbs. of air. (Power factor 1 to 1). 1" stroke. Threaded 5/16" diameter piston rod. Universal mounting: can be mounted horizontally, vertically, side, front flange, rear flange or front pivot. Overall size 4" long by 1½" square. 5/16" heavy wall brass cylinder; ⅝" heads, oil resistant "U" cup; tension balanced spring.

ORDER TODAY — Dept. IEN-752 1249

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN-8017

VULCAN
ELECTRIC HEATING UNITS

Coils of Heat

Tubular Electric Heating Units that fit around or clamp to vessels, tanks, pipes, etc., for contact heating of metals, oils, water and air.

. . . especially where little space is available and considerable heat is needed.

STANDARD SIZES or made to your requirements

VULCAN ELECTRIC COMPANY
DANVERS 8, MASS.

EXPERIENCED SPECIALISTS IN ELECTRIC HEAT
Makers of Vulcan Electric Soldering Tools, Electric Solder Pots, Electric Branding Irons, and Electric Heating Units.

If you write maker identify as IEN-8018

DE-STA-CO Toggle Clamps speed production on this simple, efficient wood turntable fixture for volume cementing of plastic fish-net floats. Twenty-four Model 210-U clamps are used to obtain quick clamping pressure. The rugged construction of De-Sta-Co clamps has permitted continuous use for over 2½ years producing 240 to 300 floats per hour. Completely retractable, they permit easy insertion and removal of work. De-Sta-Co's positive clamping pressure on the float parts makes a perfect bond and accurate assembly.

Select from over 40 models of De-Sta-Co Toggle Clamps for your work-holding problems in assembly, welding, bonding, machining or inspection of any materials. Positive holding pressures up to 4000 pounds.

Write today for your copy of the De-Sta-Co Toggle Clamp Catalog describing more than 45 stationary and portable types.

DE-STA-CO DETROIT STAMPING COMPANY
342 Midland Ave. • Detroit 3, Mich.

If you write maker identify as IEN-8019

VALVE . . Solenoid operated, time delay shut-off action is provided

Source: AUTOMATIC SWITCH CO.
379-D Lakeside Ave., Orange, N. J.

Delay precedes opening

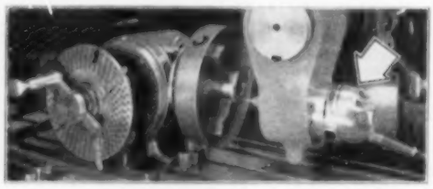
Time delay action characterizes this new solenoid operated valve in which flow of liquid or gas through the valve is delayed for a few seconds after the solenoid circuit has been closed. The valve has been designed for use in a fuel oil line to prevent flow of oil to a burner until a sufficient time has elapsed to establish a full stream of air for perfect combustion, then the burner ignites. When the burner is stopped there is sufficient delay, prior to relighting, so a fire box can be purged of old fumes and smoke. Shut-off action is instantaneous and positive. A composition disc seals tightly.

The valve is available with ⅛-in. pipe connection in either 1/16 or ⅛-in. port for pressure to 150 pounds. Corresponding flow is 15 gal. per hour. The solenoid is rated for continuous duty on 110-volt 60-cycle ac. The valve is made with a brass or stainless-steel body and stainless-steel operating parts. It measures about 2¾ in. in height.

If you write maker identify as IEN-8020

MILLING . . Router motor applied to drive small milling cutters

Source: STANLEY ELECTRIC TOOLS
478-82 Myrtle St., New Britain, Conn.



User supplies the bracket

New application of the company's 20,000-rpm. router motor is shown in the illustration. The motor is mounted in a bracket, supplied by the user, to ride on the overarm of a milling machine. The motor drives small milling cutters to machine work secured in the chuck on a dividing head mounted in the milling machine table. The motor permits operating the small cutters at high speed for efficient cutting action.

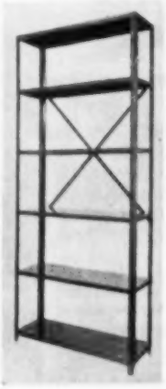
Identify as IEN-8021

Bakelite reports the first large-scale commercial packaging use of its phenolic foam by a mail-order house to protect fragile products during shipment. Examples are glassware, ceramics, china. The material is produced in 5-ft. cubes that can be lifted by one man. Weight is about one-tenth that of shredded paper. Cubes, produced as needed, are cut into slabs with a timber saw in 1 to 2-in. thicknesses prior to use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-8022

STEEL SHELVING PROMPT DELIVERY



Fort Steuben Metal Unit Shelving is fabricated from prime steel. Each unit assembly consists of four uprights and a number of shelves as required. Uprights are 13-gage angles drilled at 1½" intervals. They are supplied in sizes from 39" to 96" inclusive in height. Shelves are pressed from 18-gage sheet. Width is standard at 36" while depth can be specified at 12", 18" and 24". Assembly is by standard nuts and bolts. Finish is in durable olive-green baked enamel.

You can secure this sturdy shelving in the open design shown for general storage. Side and back panels, extra shelves, dividers, bin fronts are available to extend its usefulness.

You can use the shelving individually or mount it back to back, end to end in multiple to meet your requirements. It can be taken apart and rearranged at any time to meet changed conditions.

Write for Catalog Section 25 giving details

FORT STEUBEN METAL PRODUCTS CO.
50 Duquesne St. Follansbee, W. Va.
Phone: Follansbee 522

If you write maker identify as IEN-8023

COST-CUTTING
"STREAMLINER"
CONVEYOR SYSTEMS

Set up for continuous production! To eliminate needless manhandling, to speed the flow of materials from one department to another . . . metal stampings are moved from punch presses to assembly operation on a "Streamliner" Horizontal Belt Conveyor. Because it's engineered to customer's plant and product, this production-increasing "Streamliner" saves time, money and effort—helps to move materials safely, too! Write for our 24-page "idea-stimulating" catalog. It shows examples of "Streamliner" Conveyors in action!

HARRY J. FERGUSON COMPANY
135 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as IEN-8024

Relays BY GUARDIAN

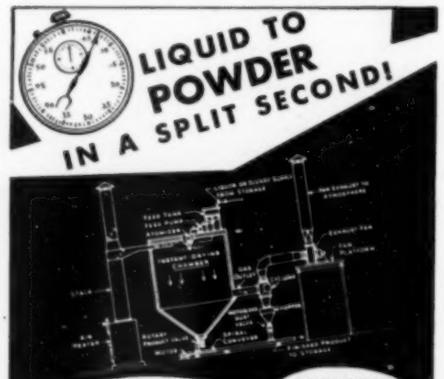
Series 595 D.C.

See ball game scores posted automatically on electric scoreboards, or watch the Signal Corps in the field with telephone sets—walkie talkies—ground to plane—ship to shore communications to witness perfect operation of Guardian Relays. Place your confidence in Relays by Guardian—expertly designed to your specifications.

For example, the Guardian 595 D. C. Relay is unusual in the amount of power it provides. Up to 6 P. D. T. contact combinations on the standard open mounted unit. Ingenious Guard-O-Seal engineering produces an amazingly compact, *hermetically sealed* unit. Your choice of terminal types in a light weight aluminum container to accommodate up to 4 P. D. T. contact combinations. Write.

GUARDIAN ELECTRIC
1620-H W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN-8025



FOR
CHEMICALS
FOOD PRODUCTS
SOAP POWDERS
CLAYS & CLAY SLIPS
PLASTICS
BY-PRODUCTS
WASTES

Instant Drying System Units are operating commercially on the drying of these materials. A large manufacturer of wall tile says their Instant Drying equipment "has produced . . . greater quantity . . . better quality . . . an economy of labor and an ultimate over-all cost reduction for the finished product."

LOW COST PRODUCTION DRYING

Write us about your drying problem. Arrange with us for test runs on your material at our Poughkeepsie plant.

INSTANT DRYING CORPORATION
104 East 41st Street, New York 17, N. Y.
Testing & Research Laboratories at Poughkeepsie, N.Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., N.Y.

If you write maker identify as IEN - 8026

MARK-A-ZONE

STRIPES LIKE MAGIC

Up to 4" width **98.50** Prepaid

Lay out and stripe your own Zones and Aisles with this automatic gravity feed, fast operating marker. Runs a clean-cut line, no drip when moved from one position to another. With its five wheels it forms a perfect guiding effect for straight lines, no matter how long. Stripes are not affected by strong winds or sloping surfaces, as actual outlet is not exposed. Spreader hood feeds paint automatically when contact with surface is made, and shuts off when raised. Push cam lever forward on left side to hold wheels down and prevent spreader from touching when standing idle. For curves and close places, front guide wheel can be raised.

S. B. BEUGLER, 3667 Tracy St., Los Angeles 39, Cal.

If you write maker identify as IEN - 8027

the standard of accuracy . . .

BOWSER XACTO

. . . the World's most widely used meters!

For over a quarter century Xacto meters have brought to industry after industry an entirely new and effective way to measure liquids accurately and dependably.

•

Xacto meters accurately measure and safely handle more than 662 different liquids in processing, blending, packaging and many other operations.

•

There is no substitute for Bowser Xacto meters for checking incoming deliveries, transferring, batching or recording consumption.

•

BOWSER, INC. 1338 CREIGHTON AVENUE FORT WAYNE 2, INDIANA

BOWSER

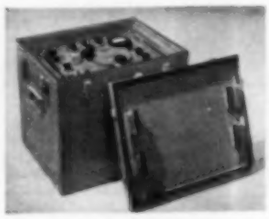
REGIONAL OFFICES

Atlanta • Chicago • Cleveland • Dallas • Kansas City New York • San Francisco • Washington, D. C. • Hamilton, Ont.

If you write maker identify as IEN - 8029

PACKAGING . . Carrying case protects in shipping and service

Source: ENGINEERED INSTRUMENTS INC. 813-17 Soto St., Hayward 20, Calif.



Each to order

Plywood, faced with aluminum and known as Plymetal, is employed in the sides, bottom and cover of this new carrying case. The case is available in a range of sizes and styles and in other materials to meet specific requirements for equipment protection in transit and in service. Water proof types can be supplied. Spare parts housings can be attached on the inside to meet individual needs.

Various types of cover fasteners, shock mounts, hinges, carrying handles, cover holding chains, corner and edge reinforcements can be specified. The assembly shown in the illustration measures 16 by 19 by 18 inches. It lists at $60 each in quantities of 25. The company will quote on other designs.

If you write maker identify as IEN - 8030

METALS . . Design strengthened sheet in patterns for specified application

Source: RIGIDIZED METALS CORP. 664-P Ohio St., Buffalo 3, N. Y.

Patterns designed for your use

The company announces addition of a new service through which it is prepared to design special patterns and to impress these patterns into specified metal sheets to meet given requirements. This service is in addition to the company's continuing use of its previously developed patterns to increase sheet strength and rigidity, to provide surface protection and to make the sheet suitable for certain functional applications. The sheet itself can be solid or perforated and also in the form of strip in coils or cut lengths.

If you write maker identify as IEN - 8031

FURNITURE . . Steel stand to handle tools or work at a machine

Source: BAY METAL PRODUCTS 3003 N. 16th St., Philadelphia 32, Pa.

Flanged top and shelf are made of 14-gage steel and are assembled in 1¼-in. angle legs to make up this new stand. It measures 30½ in. in height and is available in a range of lengths and widths to meet given requirements. Shipment is in knocked-down form and includes the necessary bolts and locknuts for assembly on the job. The shelf is reversible. Finish is in baked green enamel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8032

FREED *Instruments*

1010 COMPARISON BRIDGE
Self contained—A.C. operated
Rapid and accurate test of Resistors, Condensers, Inductors.

1020B MEGOHMMETER
DIRECT READING
Self contained—A.C. operated
Electronically regulated supply
1 megohm to 2 million megohms

1110A INCREMENTAL INDUCTANCE BRIDGE
For accurate testing of communication and television components under load conditions.

1040 VACUUM TUBE VOLTMETER
Self contained — A.C. operated
High impedance—wide frequency
Used at Audio & Supersonic frequencies.

SEND FOR COMPLETE TRANSFORMER AND INSTRUMENT CATALOGS

FREED TRANSFORMER CO., INC.
INSTRUMENTS DIVISION
1732-B Weirfield Street
BROOKLYN (RIDGEWOOD) 27, N. Y.

If you write maker identify as IEN - 8033

Speeds Soldering on Small Joints

New, lightweight iron offers these features for production-line soldering in electronic and communication industries:

- Thin shank gets tip into places a regular iron can't reach
- Lighter weight iron lowers operator fatigue
- Ironclad tip needs little maintenance

FREE BULLETIN gives you complete information. Write for GED-1583 to Sect. 720-85, *General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

If you write maker identify as IEN - 8034

Starrett FRICTION THIMBLE* MICROMETERS

Give You

- UNIFORM PRESSURE
- UNIFORM READINGS

Every Time

*An improved friction stop mechanism built right into the thimble permits easy one-hand operation of the micrometer . . . insures uniform contact pressure on every measurement. *Friction Thimble* puts the friction stop mechanism "right under your thumb" where it's easy to reach, easy to use. You get the same sure accuracy every time independent of "feel". *Friction Thimble* is an ideal feature for inspection and quality control applications and for all precision work requiring consistent accuracy. Ask your Starrett Tools distributor to show you Starrett Micrometers with *Friction Thimble* . . . plus 12 other big Starrett features including Satin Chrome Finish, Tapered Frame, Hardened Threads ground from the solid and stabilized and Hi-Micro Mirror-Lapped Finish on contact faces.

Starrett

THE L. S. STARRETT COMPANY ATHOL, MASS. U.S.A.

BUY THROUGH YOUR DISTRIBUTOR

If you write maker identify as IEN - 8035

Another **FIRST by ARO**

Instant PUSH-BUTTON *Reverse*

A REVOLUTIONARY SCREW DRIVER AND NUT SETTER

ARO's new push-button valve means *instant reverse action* . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.

The Aro Equipment Corporation, Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS · Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as IEN - 8036

in just 3 seconds

. . . you can read any surface temperature in your plant . . . accurately and easily . . . with the Alnor Portable Pyrocon.

Compact in size, complete in precision design and workmanship, this rugged instrument assures the highest standards of speed, accuracy and dependability. You can take temperature readings on materials in process, the finished product or the heated equipment itself—in as few as 3 seconds!

Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 8037

Introducing

8 NEW KNU-VISE MODELS

—to increase your production clamping efficiency still further by extending your work-holding range. Also bringing to your tool room a new type of equipment, long needed.

Base plate furnished 2 ways: (1) Loose, soft, so you can adapt it to your needs; (2) Installed, hard, thickness, including parallel jaw, 1".

Send for new catalog showing full line of KNU-VISE Clamps

Sales Offices in principal cities. Teletype DE-49

KNU-VISE PRODUCTS LAPEER MFG. CO.
3060 DAVISON ROAD • LAPEER, MICHIGAN

If you write maker identify as IEN - 8038

CUT YOUR KEYWAY
By Hand—In 1 Minute—For 1 Cent

Standard keyways from 1/16" to 1" in any bore from 1/4" to 8"—cut 'em quick and cheap with this du MONT *Minute Man* Keyway Broach Kit.

Get Size and Price Information: Mail this COUPON

The du MONT CORPORATION, Greenfield, Mass.

Please mail folder and price list N covering all *Minute Man Keyway Broaches and Kits* to:

Name .....

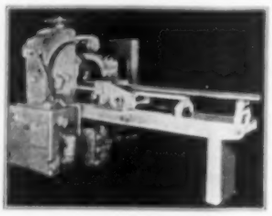
Company .....

Address .....

If you write maker identify as IEN - 8039

SAWING . . Circular blade machine with automatic hydraulic stock feed

Source: MOTCH & MERRYWEATHER MACHINERY CO.
715 Poston Bldg., Cleveland 13, Ohio



Good for forging blanks

Capacity ranges from 1 to 6½-in. round stock with feed length adjustable at ¼ to 36 in. for this new assembly of the company's No. 2 circular blade machine and its new hydraulic stock feed. The feed employs two hardened serrated grips mounted on a slide to of a supporting V-channel in the new assembly.

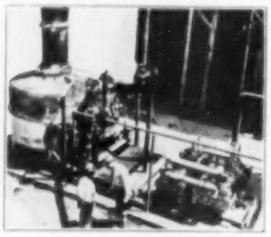
A bar is started by the operator who positions it manually on the channel so it can be gripped by the machine's hydraulically operated vertical vise for the initial cropping cut. The grippers clamp it and move it forward as soon as the initial cut has been made and the vise releases.

The vise then grips in the new location and the first production cut is made. This action continues with alternating forward feed to grip and cut until the bar has been used up and another requires manual placing.

If you write maker identify as IEN - 8040

BOILER . . Self-contained equipment is available for use on a rental basis

Source: VAPOR HEATING CORP.
4503 W. 16th St., Chicago 23, Ill.



$1,500 per month

New service is announced by the company through which it is prepared to supply individual assemblies of its automatically-controlled gas or oil-fired self-contained boilers on a monthly rental basis. The service was set up following an initial installation in which a Texas manufacturer rented a unit rated at 20,000 lb. of steam per hour for use while a previously purchased boiler was being overhauled. Installation for a boiler of this size requires a plain 12 by 20 ft. concrete base. Operating pressure for this particular installation was at 165 pounds.

Identify as IEN - 8041

Pres-a-Luber trade names the pressure-spray hand-size container in which AP Parts Corporation is packaging its Miracle Power and dgf-123 colloidal-graphite lubricants. Application leaves a graphite coating on a finished surface. The lubricants are particularly suited for external moving parts on engines and machines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8042

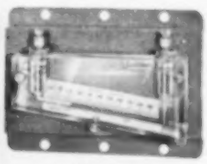
A Paid News Advertisement by Mathewson Machine Works

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works**, 26 Hancock St., Quincy, Mass.

If you write maker identify as IEN - 8043

DWYER
Unbreakable, Clear Acrylic
DRAFT GAGES



No. 200—Stationary Inclined, 0-1" Water

Portable and Stationary

The unique crystal clear, solid block bodies of these instruments are a decided advantage in making accurate readings — light enters from all angles. Continuous readings of fluctuations of drafts, air velocities, slight pressure changes, as well as vacuums and differentials, can be observed while adjustments are made. Available in a range of sizes and calibrations. Request Bulletin No. 205.

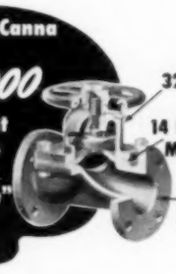
No. 102—Portable Inclined, 0-2" Water

No. 104—104.8—Portable Vertical, 0-8" Water

F. W. Dwyer Mfg. Co.
307 SOUTH WESTERN AVENUE CHICAGO 12, ILL.

If you write maker identify as IEN - 8044

Hills-McCanna offers Over 20,000 different assemblies for valving "hard-to-handle" fluids



32 Bonnets
14 Diaphram Materials
49 Body Materials

No matter how specialized your problem of valving corrosive and/or hazardous substances, slurries, viscous liquids, gases, fermentation products, materials subject to coagulation, foods or beverages, the chances are that Hills-McCanna can furnish the proper valve to meet your needs. Write, today, for full information and descriptive literature, HILLS-McCANNA CO., 2347 W. Nelson Street, Chicago 18, Illinois.

HILLS-McCANNA
Saunders patent diaphragm valves
Proportioning Pumps
Force-Feed Lubricators • Magnesium Alloy Castings

If you write maker identify as IEN - 8045

Save MAN HOURS AND CRITICAL MATERIALS
Improve QUALITY . . . with
HYPREZ "OS"
DIAMOND COMPOUNDS

Tungsten-carbide Valve and Steel Seal-Hyprez "OS" mirror-finished to perfect flatness.

Write for Complete Information or Free Demonstration to Dept E-752

Hyprez "OS" Compounds produce finer, faster finishes—in either manual or production lapping.

"OS" is self-lubricating, absorbs more abraded material—has long-lasting cutting action.

"OS" diamond particles are precision graded, uniformly distributed, permanently suspended.

"OS", like "Type W", is available in color-identified 18 or 5 gram cartridges for use with Hyprez Applicator Gun; also in jars or collapsible tubes.

HYPREZ DIVISION
ENGIS EQUIPMENT CO.
431 S. DEARBORN ST. CHICAGO 5, ILL.

If you write maker identify as IEN - 8046

"NO MORE LAMP PROBLEMS, thanks to the LUSTRA MAN,"

[says Potts-Farrington Company, Philadelphia]

"SIX MONTHS after installation, four or five fluorescent tubes used to burn out every day. The problem was really serious. Then your Lustra Man installed Lustra Fluorescents and not one has failed in over two years."

Your local Lustra Man can bring you new convenience, lowest overall lamp costs and greater efficiency through better lighting . . . with Lustra's complete quality line of Double Duty Lamps and Fluorescent Tubes. Write us and he'll arrange an appointment—Lustra Corporation, Dept. P-7, 36 Washington St., Brooklyn 1, New York.

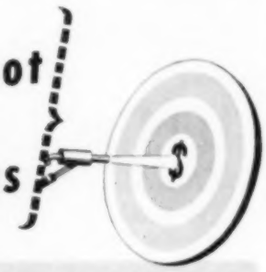
Lustra

AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 8047

a Sure Shot for Savings



14 REASONS WHY PRECISION FINISHING COSTS LESS WITH THE NEW LIQUAMATTE

Mechanical equipment for producing close tolerance finishes has finally been perfected. "Hand" finishes are now produced mechanically in a matter of seconds in the new Liquamatte without the operating difficulties usually encountered in these processes. A simplified method of wet blasting, the new Liquamatte has 14 advanced design features that lower finishing costs.

Typical heat treated forging die, one half of which has been cleaned with the Liquamatte using a fine mesh Liquabrasive.

The Liquamatte is easier to start and more convenient to operate. Work can be handled faster with less effort and with far less down time. As a result, the Liquamatte uniformly removes scale and grinding lines at a new low cost. It cleans tools, dies and molds with greater efficiency while holding tolerances of .0001".

THE 14 WAYS the Liquamatte simplifies wet blasting are described in Bulletin 23. *Send for your copy today.*

American LIQUAMATTE WET BLASTING

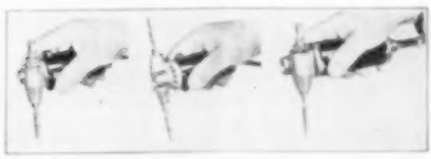
WHEELABRATOR & EQUIPMENT CORP.

307 S. Byrkit St., Mishawaka, Ind.

If you write maker identify as IEN - 8049

SCREW DRIVING . . Electric tool for free running screws, No. 0 to No. 8

Source: DREMEL MFG. CO.
2418-22 18th St., Racine, Wis.



Moto-Screwdriver in two sizes

Two sizes, known as Model SD-1 and Model SD-2, have been added to the company's line of portable electric tools. The new units are equipped with chucks at both ends of the right angle head to take screw driver bits for drive in forward and reverse directions. A slip clutch in the drive can be set for a desired tightness and to prevent thread stripping.

Model SD-1 rates from No. 0 to No. 4 screws. It weighs 12 oz., measures 4¾ in. in length and has a bit speeds of 1,200 to 1,400 rpm. Model SD-2 rates no. 4 to No. 8 screws. It weighs 18 oz., measures 6½ in. in length and operates at 1,400 to 1,600 rpm. The universal driving motor is a 110-volt unit. It can be specified for 220 volts without added charge.

If you write maker identify as IEN - 8050

LUBRICATING . . Fortified oil particularly for industrial engines

Source: SHELL OIL CO.
50 W. 50th St., Room 4237, New York 20, N. Y.

99 cents per gallon

Rimula trade names a new fortified oil containing a combination of additives for use particularly in engines driving industrial trucks where the engine is subject to corrosion and fouling. The oil is available in a viscosity range from SAE 10 to 30. It operates well in both high and low temperatures, can be employed in any gasoline or diesel engine and is available in drum or tank car lots.

If you write maker identify as IEN - 8051

HOSE FITTING . . Preformed clamp is applied and locked with special tool

Source: BAND-IT CO.
2552-88 Walnut St., Denver 5, Colorado

Band-It Jr. is a new preformed pressure clamp in a range of sizes for hose from ¼ to 2½ in. in outside diameter. It is made of high carbon coated steel and is applied by means of the company's special tool to close in the clamp and lock it.

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8052

NEW MOGUL SOLDERING AND BRAZING GUN

This new MOGUL unit is built to deposit lead and tin base solders, silver solder and brazing wires in a liquid or semi-liquid form to any constant moving part.

High or Low Speed. Moving part travels at desired speed, as Gun adjusts to your specific application.

Pinpoint Location. Deposits solder or brazing wire to exact spot for clean seam . . . material saving.

Extremely Versatile. Use Gun for constant or intermittent work of any type, regardless of shape, joints, connections, terminals or seams. Seam soldering speeds up to as much as 200 lineal ft. per min.

Saves Time • Saves Solder

Recent installation of a Mogul Gun afforded a reduction of 75% in labor costs plus appreciable solder savings. Perhaps Mogul can do the same for you. Write today for full information.

METALLIZING COMPANY OF AMERICA

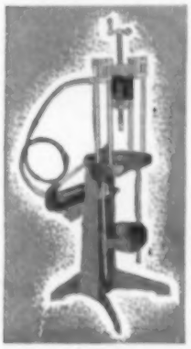
Dept. IEN, 3520 West Carroll Ave., Chicago 24, Ill.

If you write maker identify as IEN - 8053

OTC 17½ TON HYDRAULIC OPEN THROAT PORTABLE PEDESTAL PRESS

ONLY $199.95

SAVES HOURS AND DOLLARS ON EVERY JOB



An unbelievable low price for this amazingly efficient Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller . . . a must for every maintenance shop. Pays for itself on the first few jobs in time, tools and money saved.

Use it for pressing bearings, bushings, pins, for bending, straightening, compressing, spreading, etc. Move it where you want it—it's portable.

STRONG . . . will handle 95% of all pulling or installing jobs.

COMPACT . . . Base is only 20" x 21" — 34½" from top of press plate to floor. Press Plate throat is 7½" deep, 6" wide, 10½" clearance between uprights; 11" from Ram to press plate with almost unlimited vertical adjustment. Weighs less than 200 lbs.

VERSATILE . . . POWER-TWIN Hydraulic Unit may easily and quickly be detached for field service or other pulling jobs.

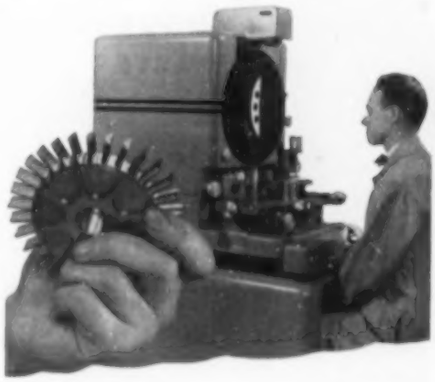
INEXPENSIVE . . . dollar for dollar . . . ton for ton . . . the lowest priced, most rugged and efficient Hydraulic Press on the market.

See your jobber for complete information or write us.

OWATONNA TOOL CO.

371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN - 8054



FOR RAPID, ACCURATE INSPECTION of difficult shapes

If you've been thinking of inspection by optical comparison only in terms of silhouetting simple parts, you may be overlooking a chance to lower your inspection costs, speed the work.

For example, with the Kodak Contour Projector, there's a trick made possible by the unique Surface Illuminator. To inspect the above impeller that goes into a jet engine component, Eclipse-Pioneer Division of Bendix Aviation Corporation projects the end of a blade by light directed straight on it *out of the same lens that picks up the image.* Conventional shadow projection just wouldn't do it.

In measuring this part, the two micrometers used operate independently of the elevating and cross-travel screws to eliminate strain and wear. They are provided with dial pressure indicators—there's no "micrometer feel" required. The operator works unhampered by hoods or curtains, needs little training to get the work out in a hurry.

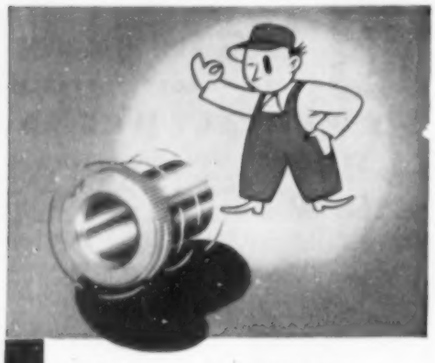
If your need is for toolroom measurement, the Kodak Contour Projector, Model 2A, is your choice. If your need is for fast production inspection, the economical, stripped-down Model 3 will meet your requirements. There is a field engineer in your area who will be glad to discuss your requirements with you. No obligation, of course. Just write to Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

A new sound movie shows how to simplify complex inspection problems. We'll tell you how to get it for a showing.

Kodak

If you write maker identify as IEN - 8056



100% CONCENTRICITY AND HARDNESS TESTS ASSURE ACCURACY— SUPERFINISH BORES ASSURE LONG LIFE OF UNIVERSAL DRILL BUSHINGS

153-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 8057

Where there are **DOUBTS** *instead of* **FACTS** . . . **LABEL IT** *with* **Kum-Kleen** *labels*

WHY LABEL WITH *Kum-Kleens* — Wherever there's an unanswered question, a guess instead of a know, or a hesitation on identification or procedure, that's the place for Kum-Kleen labels. One electronic manufacturer records assembly and testing steps on Kum-Kleen labels, which are easily peeled off and filed for future reference.

***Kum-Kleens* are EASILY APPLIED** — Avery Kum-Kleen, pressure sensitive labels are just laid on with a finger-touch. They're self-adhesive — easy to apply — stick to any clean, smooth surface . . . require no moistening, soaking, heating.

***Kum-Kleens* CUT LABELING COSTS** — The patented Avery Dispensers—manual or electric—feed die-cut labels off roller tape, freely for quick, clean labeling. Many users report labeling speeds 5 times faster than conventional methods.

***Kum-Kleens* are MORE PRACTICAL** — Kum-Kleens *stay stuck* even in extremes of temperature and humidity with no peg, peel or curl. No excess glue or moisture to clean up! THEY SAVE TIME, LABOR AND COSTLY MISTAKES!

WHAT TO LABEL WITH *Kum-Kleens*: Nameplates—Trademarks—Guarantees—Instructions—Approval Seals—Diagrams—Inspection—Caution—Repairs—Prices—Marking—Routing—How to use Copy . . . and many others.

Kum-Kleen — the original pressure sensitive label — is a product of **AVERY ADHESIVE LABEL CORP.** *WHERE can you use these labels in your business?*

117 Liberty St., New York 6 • 608 S. Dearborn St., Chicago 5 • 1616 So. California Ave., Monrovia
Offices in other principal cities

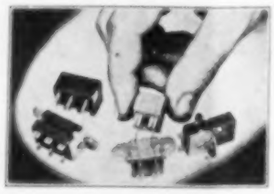
☐ Please send case histories, free samples and prices
☐ Have the Avery label man call

Name _____
Title _____
Company _____
Address _____

If you write maker identify as IEN - 8059

CONNECTOR . . Plugs and sockets, unlimited combination of four elements

Source: ELCO CORP.
188-92 W. Glenwood Ave., Philadelphia 40, Pa.



For user assembly

Varicon trade names a new electric connector in which fork type conducting fingers are clamped within sectional Durez phenolic plastic body pieces by means of a through bolt. Any number of body sections can be assembled to make a desired bank of circuits. Each rates 30 amp. at 110 volts. The assembly rates 4,000 volts between the closest terminals.

The fork ends extending from the plug assembly lie at 90 degrees with the same fork ends enclosed within the female body. The two come together to make contact along the complete length of the forks. The resulting spring effect provides constant pressure without over stressing. Insertion or withdrawal requires only a little force. At the same time the design of the contacts themselves assure maintenance of positive pressure and prevent the connection from working loose.

Contact spacing is suitable for 300-ohm circuits. The contacts are brass, bronze or beryllium copper, silver plated.

If you write maker identify as IEN - 8060

TRUCK . . Hydraulic clamp attachment to handle cartons on fork lift truck

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Grips without crushing

Plate equipped clamping arms move in and out hydraulically on the two sides of a load with this new lift-truck Carton Clamp attachment. The arms are articulated to equalize pressure. A regulator in the hydraulic line permits pressure adjustment. The attachment will handle 1, 2, 4, 6 or 8 loaded cartons at a time for stacking or transport without a pallet.

Identify as IEN - 8061

Tiny leaks developing in tank cars handling liquids such as acids, wines, syrups, edible oils, liquid pitch, fuel oil, can be plugged by adding a small amount of asbestos fiber to the bulk liquid. The asbestos filaments follow the currents in the tank to wherever the leak may be. There they mat to form a plug. Hercules Filter Corporation supplies the asbestos ready to use and advises on means for introduction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8062

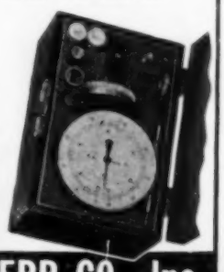
Control **MAXIMUM PRODUCTION**

with G. S. HAND TACHOMETERS and SPEED INDICATORS

1% Accuracy for any range from 30 to 100,000 RPM or surface speed.

Antimagnetic durable mechanism.

Efficient repair service at moderate charges.



IDEAL FOR MOTORS — SHAFTS SPINDLES — LOOMS TURBINES — FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST. • NEW YORK 12, N. Y.

If you write maker identify as IEN - 8063

MARKEM

marks them all

FROM ARTILLERY SHELLS TO MEDICAL AMPULES

MASTERS OF MARKING — Since 1911

Markem methods, machines, type and inks have been marking the products of industry for forty years. Markem machines can mark up to many thousands of pieces per hour. They make clear, durable imprints on flat, curved or irregular surfaces of paint, paper, wood, glass, metal, leather, plastic, rubber, fabric, composition and pressure sensitive tapes. No special skill is needed for their operation. Legend and color of imprint may be quickly and easily changed.

MAKE YOUR MARK WITH MARKEM

When your products need marking for Identification, Control or Market — ask Markem. Submit your problem, together with a sample of the item to be marked. Markem Machine Company, Keene 2, New Hampshire.

MARKEM BETTER MARKING SINCE 1911

If you write maker identify as IEN - 8064

ILLINOIS
STEAM SPECIALTIES

Replace Obsolete Steam-Wasting Units With Illinois Specialties

Equip your radiators with smooth-acting Illinois Supply Valves and sensitive, steam tight Illinois Thermo Traps.

Improve system operation by replacing thermostatic drip traps with Illinois Float and Thermostatic Traps wherever rapid elimination of condensate is essential.

Illinois Float and Thermostatic Traps are made in three Series to meet a wide variety of applications and for operating ranges from 50 pounds pressure to 25 inches vacuum.

Investigate! Compare! Try Illinois Traps on your worst service and be guided by results!

Write for Bulletins

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

If you write maker identify as IEN - 8065

MILLIONS

IN STOCK FOR IMMEDIATE DELIVERY

MACHINE SCREWS

all popular sizes with nuts. Steel or brass, slotted or Phillips head. Maximum discounts.

Write—Wire—Or Phone!

STERLING BOLT co.
387 WEST ERIE STREET • CHICAGO 10, ILLINOIS
Telephone: SUperior 7-3800 Teletype CG 488
Cincinnati, Indianapolis, Milwaukee, St. Louis

If you write maker identify as IEN-8066

New! WRICO Lettering Guide!

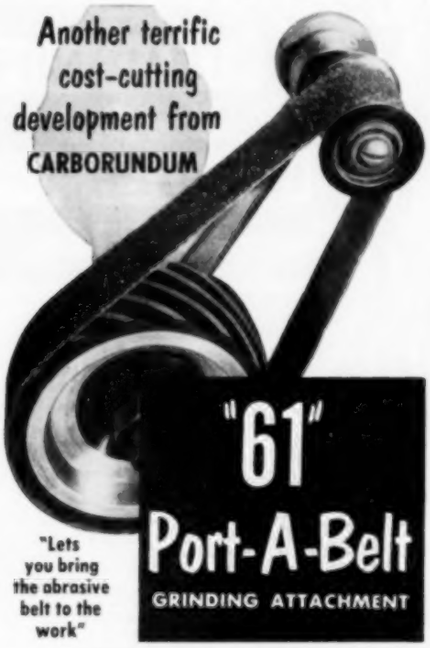
Now, with Bruning's new WRICO Lettering Guides and non-slip holder, you can letter quickly, easily, *professionally!*

With the new, exclusive skidproof feature, there's no more need for straightedges, weights or thumbtacks. You simply move the guide back and forth in the holder and letter at *any angle* on your drawing. Vertical, slant or italic letters are made by a simple adjustment of the scriber.

Write for bulletin to CHARLES BRUNING COMPANY, INC., Depo B72, Teterboro, N. J.

BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN-8067



Another terrific cost-cutting development from CARBORUNDUM

"61" Port-A-Belt GRINDING ATTACHMENT

"Lets you bring the abrasive belt to the work"

OUTSTANDING FEATURES

- No bounce—no chatter—easy to handle.
- Uses revolutionary "61" wheel principle—belts grind faster, last twice as long.
- Fits practically all standard-make horizontal portable grinders—electric or air.
- Ideal in close quarters—replaces two or three conventional finishing operations.
- Worn belts snap off—new belts snap on—in a jiffy.
- Two handy, compact models—No. 400-300 (illustrated) takes 20" x 2" belt...No. 200-100 takes 12" x 1" belt.

OUTSTANDING USES

- Roughing, finishing and polishing dies and molds.
- Reducing welds—one operation now replaces triple use of cup wheel, sander disc and set-up wheel.
- Breaking edges—saves 60% of the time you now spend with cones, hand files or sander discs.
- Surface finishing of contours—concave, convex or irregular—free from lap or gouge marks.

Get the details

THE CARBORUNDUM COMPANY, Dept. IEN 82-73
Niagara Falls, New York
Tell me more about your new PORT-A-BELT Grinding Attachment.

Name _____
Company _____
Street and Number _____
City _____ Zone _____ State _____

Look to **CARBORUNDUM** TRADE MARK
for the NEW developments in ALL abrasive methods

"Carborundum" and "Port-A-Belt" are trademarks of The Carborundum Company, Niagara Falls, N. Y.

If you write maker identify as IEN-8069

MILLING . . Profiling machine, 2 by 4 in. work area, 1¼ in. depth

Source: WADE TOOL CO.
55 River St., Waltham 54, Mass.

Controlled by two levers

The vertical spindle in this recently redesigned No. 45 machine is carried in a head mounted on horizontal ways on the face of the machine housing for cross travel to 2 inches. The spindle has 1¼ in. of vertical feed from a maximum distance of 4⅝ in. above the ⅛ in. fixture block on the table. Both of these movements are controlled by a single ball-and-socket lever extending to the front from the head. Spindle drive is by a ⅛-hp. three-phase 60-cycle ac. motor. Eight spindle speeds are provided between 437 and 7,000 rpm. by changing belts and by reversing the sheaves.

Follower spindle is mounted on the head beside the main spindle. It is V-belt connected to the main spindle and is located 2.047 in. between centers. A follower pin applies in this spindle with a work cutter in the main spindle. The arrangement can be reversed when a new master is to be cut under the follower spindle position.

The work table measures 5⅛ in. in width by 3⅛ in. front to back. It is mounted on horizontal ways for movement front to back through 4½ in. by means of a lever on the left hand side. Overall dimensions are 24 in. in width by 26 in. front to back by 57 in. in height above the floor when mounted on an available steel cabinet.

The machine takes standard ⅜-in. cutter shanks in its collet chucks and is suited for a range of profiling, milling, slotting, recessing and routing operations on a variety of small mechanical parts. A coolant pump is part of the equipment. The machine base acts as a coolant reservoir.

If you write maker identify as IEN-8070

WASHROOMS . . Women's urinal for standing use, need not be touched

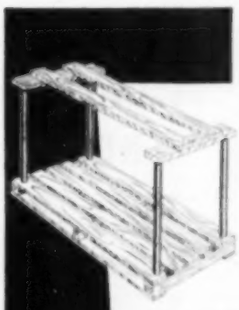
Source: AMERICAN-STANDARD
P. O. Box 1226-A, Pittsburgh 30, Pa.

Sanistand Bulletin

New design has been added to the Sanistand women's urinal, previously described IEN-4251-50, for application in washrooms. The new unit is operated by a hand lever on an 8-gal. tank to flush and refill. Except for the tank, the new unit is the same in design and standing operation as in the original foot operated direct pressure model. Cleaning is assisted by the fact that the urinal has no seat. It is not necessary to touch it in order to use it. Construction is in vitreous china in white and pastel shades.

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-8071



NATIONAL Develops Revolutionary NEW, RIGID RACK PALLET

Serving industries' Largest Users of Pallets from Coast-to-Coast & Border-to-Border

Stacks better — without sway . . . More Accessible—more usable space—no cross braces . . . No special pipe necessary — use your own rejects and buy National base and top; can be used for regular Pallet when not in Rack service . . . Ideal for storage and handling of speed boats, maps, pails, furnace units, tires, furniture. Costs about ⅓ the price of other Pipe Rack Pallets.

Wire, phone or write today for complete technical data. Dept. E.N.

NATIONAL — NATIONAL PALLET CORP.
MAIN OFFICES OLIVER BLDG PITTSBURGH 22, PA

If you write maker identify as IEN-8072

CAN YOU AFFORD NOT TO GIVE YOUR WORKERS PROPER Seating?

A tired worker costs MUCH more than a GOOD CHAIR

Royal's 515 STOOLS WILL HELP KEEP YOUR WORKERS AT PEAK EFFICIENCY...

Resulting in More Work Produced per Man Hour and Lower Actual Costs per Chair.

- STURDY MASONITE INSERT IMBEDDED IN SEAT PAN.
- LEG EXTENSION FOR EASY HEIGHT ADJUSTMENT.
- ADJUSTABLE BACKREST.
- OVEN BAKED GREY ENAMEL FINISH.

60 DAY FREE TRIAL
examine it... test it... use it without obligation

ROYAL METAL MFG. CO.
175 NORTH MICHIGAN AVENUE
CHICAGO 1, ILLINOIS

If you write maker identify as IEN-8073

Stop human errors in reading, remembering, recording! Toledo Printweigh Scales provide accurate printed weights . . . *accurately* recorded. Send for bulletin 2021. Toledo Scale Co., Toledo 1, Ohio.

CONTROL COSTS

TOLEDO
Headquarters for SCALES

If you write maker identify as IEN-8074

New XL BOND FOR CARBIDE TOOL AND CUTTER GRINDING

"XL" is Chicago Wheel's exclusive new bond for silicon carbide vitrified grinding wheels, especially made for grinding carbide cutting tools. Ideal for rough and finish grinding . . . offhand or precision automatic. Supplied in most popular sizes and steel backs. Prompt delivery. Keep your production up . . . costs down, with "XL."

Write today for information—Dept. H

CHICAGO WHEEL & Mfg. Co.
1101 West Monroe St., Chicago 7, Illinois
OFFICES IN PRINCIPAL INDUSTRIAL CENTERS

If you write maker identify as IEN - 8075

REALOCK FENCE

GIVES *Positive* PROTECTION

Positive protection for your grounds and property is assured with Realock Fence. In addition, all fittings, hinges and locking devices have bolts on the inside, secure from outside tampering.

Noted for its rugged construction and long-lasting weather resistance, Realock Fence can be depended upon for years of dependable, trouble-free service.

For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION
Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION
Oakland, California
WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 8076

TRY

GPX PLASTIC-FACED PLYWOOD NOW IN FOUR VERSATILE GRADES

GPX's amazing versatility and outstanding performance has created over 60 proven cost-cutting industry uses . . . such as foundry match plates, photo lab equipment, testing tables, leather drying boards, and concrete forms.

GPX is available in four grades:

Concrete Form — General Use (Natural high resin)
Interior Paint Grade (White) — Exterior Paint Grade (Brown)

GPX is top-grade solid core exterior Douglas Fir Plywood, surfaced with a layer of phenolic resin plastic under heat and pressure that makes the hard, dense plastic surface a part of the plywood itself.

CHECK THESE GPX PROPERTIES:

- WEATHERPROOF . . . unaffected by sun, rain or freezing
- WATER RESISTANCE . . . 20 times more resistant to water absorption than ordinary plywood
- ABRASION RESISTANCE . . . 10 times as abrasion resistant as ordinary plywood in dry tests . . . 50 times when wet
- CHEMICAL RESISTANCE . . . resists hydrocarbons, alcohol, mild acids and mild bases
- VERMIN RESISTANCE . . . immune to termites, marine borers, mold and fungi when properly edge-sealed
- INCREASED DIMENSIONAL STABILITY . . . stronger than steel (weight for weight)
- EASY-TO-WORK . . . easy to saw, drill, sand, nail, coat, glue or paint
- VARIETY OF GRADES AND WEIGHTS . . . comes in 4 grades, 5 thicknesses. Standard panel size 4 x 8 x 0. Longer lengths on special order

Get full details today!

GP GEORGIA—PACIFIC PLYWOOD COMPANY
614-7 A North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Lancaster, Louisville, Memphis, Nashville, Newark, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon today

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.
Please send me the GPX Use Folder.
NAME
FIRM NAME
FIRM ADDRESS
CITY STATE
POSITION

If you write maker identify as IEN - 8078

RECORD KEEPING . . Card punch adds to selected data from master file

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Card-o-Matic Punch Type 308-3

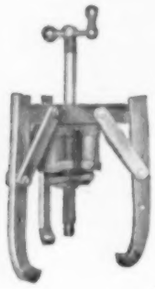
Card-O-Matic Punch with its remote control sensing unit and punch key board comprise new equipment for use in operations such as billing, sales analysis, payroll work, order writing, preparation of shipping tags. The new equipment applies with the previously developed Conveyfiler in which a motor driven conveyor built into a table type housing handles 60,000 master cards in a closed circuit.

The operator selects a desired master tabulating card containing repetitive data. He inserts it in the sensing unit of the punch, selects desired information from the master card, adds variable data, punches a new detail card and reinserts the master card in the file. The complete operation requires only a few seconds.

If you write maker identify as IEN - 8079

PULLING . . Three-arm head applies on company's hydraulic jack

Source: OWATONNA TOOL CO.
371 Cedar St., Owatonna, Minn.



Three pulling arms are assembled on a head designed to apply on the company's Power-Twin hydraulic Jack, previously described IEN-4698-52. The unit is designed for operation by a hand pump that constitutes part of the jack equipment. A crank operated screw extending through the jack permits adjustment prior to applying the hydraulic pressure. Three head assemblies rate 17½ and 30 ton.

Identify as IEN - 8080

Weather conditions 30 days in advance for each month of the year by days, by cities and areas are now being predicted and published on a map of the United States by Biewett Weather Service. Expected rainfall, anticipated average temperatures are predicted by cities.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8081

HOW TO CUT BELOW-ROOF HEAT 13° to 26° *Immediately!*

Brush or spray on Tropical Roof Coolerant and *feel* the difference at once! This non-staining, bright metallic coating reflects up to 70% radiant heat away from the roof, cuts below-roof temperature up to 26° to give hot-weather comfort. Anyone can apply Tropical Roof Coolerant quickly, easily, at low cost. Do it NOW!

LENGTHENS ROOF LIFE, TOO!

Bright, seamless Roof Coolerant metallic shield prevents drying action of summer heat, keeps roof flexible, prevents cracks and leaks. Adds years to roof life!

FREE! Complete information, literature, on Tropical Roof Coolerant for comfort and roof protection THIS SUMMER. Write today!

THE TROPICAL PAINT & OIL CO. SINCE 1883
1126-1278 W. 70th Street • Cleveland 2, Ohio

If you write maker identify as IEN - 8082

ENGINEERED SERVICE

PHILLIPS

POWER TOOL MANUFACTURER CLEANS METAL PARTS BETTER, FASTER WITH A PHILLIPS DEGREASER

Skilsaw reports improved cleaning before painting and assembly.

Above: Metal parts are cleaned in Phillips Model 60 degreaser. Inset shows parts after degreasing.

HERE is another case illustrating the high cleaning efficiency of Phillips degreasers. Skilsaw, Inc., Chicago, uses a Phillips Model 60 electric batch-type machine to clean both aluminum and iron castings, steel stampings, shafts and screw machine parts before painting and assembly of the finished product.

Skilsaw reports that the Phillips unit cleans their parts better, as well as 3 to 4 times faster than their former method.

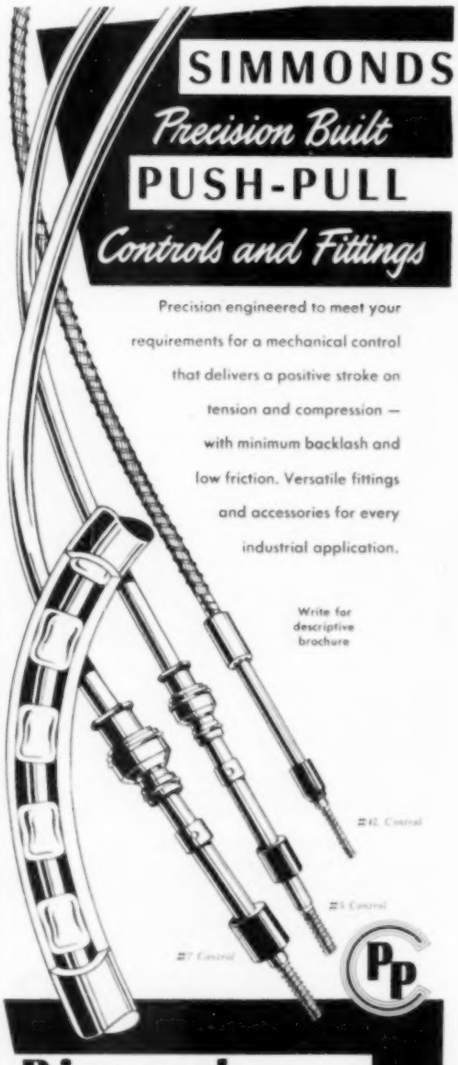
Check into the time and money you can save with Phillips Vapor Degreasing. Our representative will be glad to discuss your parts cleaning problem with you.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Vapor Degreasers • Solvents • Parts Washers

If you write maker identify as IEN - 8083

SIMMONDS *Precision Built* PUSH-PULL *Controls and Fittings*



Precision engineered to meet your requirements for a mechanical control that delivers a positive stroke on tension and compression — with minimum backlash and low friction. Versatile fittings and accessories for every industrial application.

Write for descriptive brochure

Pinnacle Products *Corporation*
9 Rockefeller Plaza, New York 20, N. Y.
An Associate Company of Simmonds Aerocessories, Inc.
Tarrytown, New York

If you write maker identify as IEN - 8085

You are SURE of instant, unfailing safeguards when you install EVERLASTING VALVES with Pendulum Stop on your fire protection system. The valve action is immediate and positive . . . the flow is full and unimpeded . . . there's no danger of sticking, binding or wedging. Made in all sizes from 1 in. to 8 in. and may be arranged for control from any location. Write for Bulletin E-52C describing these valves in detail.

EVERLASTING VALVE CO., 49 Fisk St., Jersey City 5, N. J.

Trade-Mark "EVERLASTING"—Reg. U. S. Pat. Off.

Everlasting Valves FOR EVERLASTING PROTECTION

If you write maker identify as IEN - 8086

PITTSBURGH air pressure tested COILS

Pipe Coils — Bends — Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Boiler Tubes. "Let us quote!"

Ask for Pipe Coil Data Book

Pittsburgh Pipe Coil & Bending Company
Division of Enameled Metals Company
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA.

If you write maker identify as IEN - 8087

You can save Plenty..! in your shipping room with the right MARKING DEVICES

Makes a 2" wide mark.

ADJUST-O-FLO
FOUNTAIN STENCIL BRUSH

4 FAMOUS FORCE FEATURES
1. Load it without removing brush.
2. Uses all pigmented fluids.
3. Clean it . . . no ink gets on hands.
4. Use it all day without tiring. It's aluminum, light.

VERSATILE POCKET MARKING PEN #57

Instant dry or opaque . . . heavy duty . . . no leak. Sturdily built of handsome, satin-finish aluminum.

Choice of 4 nibs
ROUND • CUBE
CHISEL • SQUARE

Write for catalog D

WM. A. FORCE & COMPANY, INCORPORATED
64 White Street, New York 13, N. Y.

If you write maker identify as IEN - 8088

PRINTING . . Headline composer photographs type on sensitized strip

Source: RALPH C. COXHEAD CORP.
718-22 Frelinghuysen Ave., Newark 5, N. J.

Plastic impregnated strip will not smudge

Characters are photographed one at a time upon a 35-mm strip of sensitized paper in this new Headliner photo-composing machine. The paper strip is fed by means of sprockets to pass beneath a 13-in. plastic negative disc carrying the font of characters arranged around circle. The disc mounts on a spindle that connects with a knob on the top of 18 in. square housing so characters can be selected. Each indexes into correct position by means of notches in the disc edge to provide correct letter spacing.

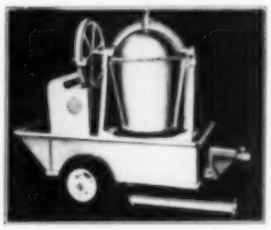
Upon positioning a given character, a knob at the front of the housing is pressed to make the exposure. Then the next character is selected. The movement advances the strip.

The exposed strip moves through developing, fixing and washing tanks to emerge as a finished print. No dark room is required. In an interval of 90 seconds the finished print begins to emerge from the delivery slot. The font discs are interchangeable. They can be specified in a variety of styles and sizes of type from 18 to 72 point.

If you write maker identify as IEN - 8089

CONSTRUCTION . . Concrete mixer weighs 147 lb. and rates 3 cubic feet

Source: WRIGHT ENGINEERING & SUPPLY CO.
1302-6 S. Bannock St., Denver 10, Colo.



Mixes batch in two minutes

Aluminum is employed in the bowl, the drive sheave, yoke and bearing castings of this new portable concrete mixer. The drum is made of 16 gage steel, machine rolled and flanged to the bowl which is mounted on a cold rolled steel shaft. A control lever is provided so the drive can be employed to upend the drum toward either side to receive a load. Provision is made for a motor or gasoline engine belt connection.

As shown in the illustration, the company is prepared to supply a wheel mounted mortar box in which the mixer can be transported from one job to another. Mixing is accomplished by the action of four paddles, two in the center of the drum and two at the back near the bowl.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8090

They'll last this time!
THEY'RE RESOLITE SHATTERPROOF LIGHTS!

Every factory or shop subject to severe vibration, concussion, intermittent radiant heat and other causes of glass pane breakage, should be glazed with shatterproof, crackproof RESOLITE.

Pale green Resolite provides high light transmission, excellent light diffusion and visual comfort. Resolite is molded of polyester resins, reinforced with Fiberglas mat. It is unaffected by weather extremes of heat, cold or moisture and inert to industrial fumes.

For glazing partitions or similar use, Resolite is supplied in flat sheets up to 42" x 96", in standard or extra heavy weights, and in eight colors. Sheets or lights are cut at the factory to specified dimensions, but may be cut on the job, when necessary, with a hand or disk saw. Standard glazing methods are used to install Resolite.

Resolite is also supplied in standard corrugated roofing sheets for simplified skylighting.

For complete information and name of nearest distributor, write:

RESOLITE Corporation • ZELIENOPLE, PA.

If you write maker identify as IEN - 8091

5 FIRMS ALONE PURCHASED. . .
2,165,458 LBS.
SPEED PATCH
WORLD'S FINEST, FASTEST, FLOOR FIXER!

REPEAT ORDERS ARE PROOF OF A PRODUCTS MERIT

Many millions of pounds of Speed-Patch are in use. Five firms alone, purchased 2,165,458 lbs. The reason is simple. Speed-Patch is unequalled for patching worn, cracked, cratered floors. Easy to apply. Takes only one minute per square foot. No waiting to set or dry . . . truck over it immediately. It's tough, long-lasting, economical, ready-mixed. Write for details NOW!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

If you write maker identify as IEN - 8092

SPRING WIRE

Absolutely uniform in gauge, finish and mechanical properties

ROEBLING is about the largest specialty wire manufacturer in America . . . and Roebling uniform quality always helps cut preparation time and boost production for users.

Typical of Roebling specialty products are mechanical spring wires including hard drawn, soft, annealed or oil-tempered M.B., H.B. and Extra H.B.; music wire; upholsterers' spring wire and valve spring wire . . . all in a full range of mechanical properties and finishes.

We can give you fast deliveries to meet your needs, right now! John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

If you write maker identify as IEN - 8093

For repetitive cutting . . . THIS COMBINATION SAVES TIME AND MONEY

ANY quantity of identical lengths of bar stock are cut automatically in a Wells No. 12 Heavy Duty Metal Cutting Band Saw equipped with a Wells-O-Bar Feed Master.

In operation, the cutting head of the saw descends at a rate governed by a predetermined blade pressure setting. At the completion of each cut, the head automatically rises to a preset height and the stock is automatically projected for the next cut. The machine requires no attention except for reloading. Ask your Wells Dealer for complete information or write direct.

Wells

Products by Wells are Practical
METAL CUTTING BAND SAWS
WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as IEN - 8094

SPRAY NOZZLES... two guides to proper selection!

No matter what you may face in the way of a spraying problem, it can be solved quickly and at low cost with Spraying Systems Spray Nozzles. Two fact-packed catalogs—No. 22, General Industrial Spray Nozzles, and No. 23, Pneumatic Atomizing Nozzles—are yours for the asking. They show you all the various types of spray nozzles available . . . explain design and construction . . . and outline spray characteristics such as atomization, impact of spray and capacity. Write for your copies today.

SPRAYING SYSTEMS CO.
ENGINEERS AND MANUFACTURERS
1206 RANDOLPH STREET BELLWOOD, ILLINOIS

WRITE FOR CATALOGS NO. 22 AND NO. 23

If you write maker identify as IEN - 8095

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 8096

You need this Carey Reference Manual

for Asphalt Asbestos • Magnesia Products

Send today for your FREE copy of this new Carey Reference List. It's designed to save you time in matching products to specifications—and vice versa. No industrial executive, designer, engineer or architect should be without it. Just fill in coupon and mail today for your FREE copy. No obligation!

THE PHILIP CAREY MFG. CO.
CINCINNATI 15, OHIO.

Carey

The Philip Carey Mfg. Co.,
Cincinnati 15, Ohio, Dept. IE-7

Gentlemen: I want a FREE copy of the Carey Reference List for Asphalt, Asbestos and Magnesia Products.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

If you write maker identify as IEN - 8097

TESTING . . Electronic instrument reads torque in small ball bearings

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

To select for assembly

Ball bearings, such as those used in instruments, are inserted one at a time in an adapter to mount in this new tester. The inner race clamps to a shaft. The outer race connects for revolution in either direction by a motor. Torque from the outer race is transmitted through the bearing to the inner race and shaft tending to rotate the shaft and angularly displace an electromagnet pick-up.

A signal, proportional to the displacement, is generated in the pick-up and is delivered through an electronic circuit to a torque motor. This motor generates counterbalancing action to provide a measurement of the bearing torque.

The data can be recorded on a milliameter or indicated by a micro relay in the form of a "go no-go" gage that actuates a signal lamp to indicate when a predetermined value has been exceeded.

The mechanical portion of the assembly measures 6 by 9½ by 6 in. and weighs 13½ pounds. The electronic unit measures 17 by 8½ by 9½ in. and weighs 21½ pounds. The recorder, available to specification and not shown in the illustration, measures 10 by 13 by 11 in. and weighs 35 pounds. Operation is on 110 volt 60-cycle ac.

If you write maker identify as IEN - 8098

DRILLING . . Air hydraulic head drives ¼ in. chuck, has 2 in. stroke

Source: ALKON PRODUCTS CORP.
698 E. 142nd St., 1st Floor, New York 54, N. Y.

List is $99

Compressed air from a shop source connects to this new head to provide the feed pressure. Actual feed movement is regulated by flow of oil through an orifice. The head is equipped with a ball bearing spindle and mounts a V-belt sheave at its rear end. At the front is a ¼-in. chuck. Stroke is adjustable for any amount to the maximum 2 inches. Maximum control feed is 1¼ inches. The head is designed for spindle speeds to 12,000 rpm. Center mounting distance is minimum at 2 inches.

Identify as IEN - 8099

A dozen De-Sta-Co plier-type toggle clamps are the means to hold work in a welding jig on an engine-manifold reconditioning job. The clamps are separate from the jig itself. They are applied and removed one at a time. Fifty-four manifolds can be handled in an eight hour shift.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8100

Dekoron plastic armored metal tubing . . . *an exciting new material for product designers*

Dekoron tubing is produced by a patented extrusion process which shrinks a thick coating of colorful and durable plastic over any tubular or solid metal core. This gives it an attractive, moisture-resistant finish with the structural strength of the metal tubing.

Available in a large variety of colors, shapes and sizes. Dekoron is currently in use in:

electrical conduit
instrument air lines
children's furniture
wheeled goods
office and industrial furniture
outdoor furniture
garment racks
crowd control rails
appliance handles
architectural trim
fluid lines

For color, structural strength, and corrosion resistance, investigate Dekoron today. Literature available on request to Samuel Moore & Company, Dekoron Tubing Division, Mantua, Ohio.

Dekoron® tubing
PLASTIC ARMORED METAL

If you write maker identify as IEN - 8101

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY
for your free copy of CATALOG 51

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN - 8102

Soreng electrical specialties for appliances, machines and other equipment are designed, engineered and built completely in our own extensive plants. That's your assurance of *finest* quality—in performance, in materials, in workmanship. Your assurance, too, of complete satisfaction through years of efficient, low-cost, trouble-free service.

A few of the many Soreng-engineered specialties include:—

- TT Type Solenoids—for more work per unit volume.
- Switches—hundreds of various types for automobiles, refrigerators, washers, other home appliances, machine tools, and many others.
- Terminals—in a wide range of types that speed production and cut costs.

Every Soreng component is backed by more than 25 years experience, engineering leadership, and precision manufacturing. You can depend on Soreng because *Soreng means finest quality electrical specialties!* For engineering help with *your* problems, write—without obligation—to Dept. A72.

SM

Specialists In Electrical Specialties

SORENG MANUFACTURING CORPORATION
9555 Eden Ave., Schiller Park, Ill. (Chicago Suburb)
Plants: Schiller Park, Ill. • Fremont, Ohio

If you write maker identify as IEN-8104

Man-hours saved! Truck jams eliminated! Parts and small unit movements expedited with MATOT dumb waiters.

MATOT dumb waiters are easy to install in old or new construction. Light weight. Capable of surprising load capacity. Manual or automatic.

Ideal for hotels, hospitals, institutions and restaurants. Time, labor and money savers for industrial feeding units.

MATOT dumb waiters have many industrial applications, particularly with parts, hardware and small appliance manufacturers.

Write for FREE data or see SWEETS Catalog File

D. A. MATOT, Inc.
1533 W. Altgeld Street • Chicago 14, Illinois

If you write maker identify as IEN-8105

good head for fast work

This head lets you see what you're doing; keeps controls at the comfort level; responds quickly with minimum effort. Correct gear ratio makes manual head traversing easy, lets you spot the head right on the "O". Gilbert "heft" in the right places minimizes deflection, holds accuracy even when drilling large work at outside limits of head and arm travel. Write for new Bulletin No. 349. *Those who buy Gilbert buy Gilbert again.*

THE CINCINNATI
GILBERT
MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

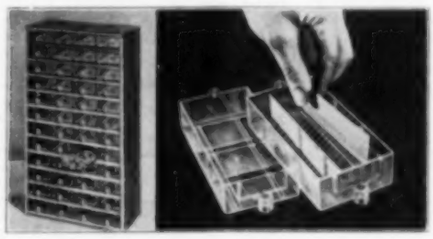
RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN-8106

If you write maker identify as IEN-8107

STORING . . Transparent trays and metal cabinet to hold small parts

Source: AKRO-MILS INC.
P. O. Box 989-A, Akron 9, Ohio



List price is $3.75 to $23

An adapter kit and a new complete cabinet with 48 transparent plastic trays have been added to the company's parts storage equipment, previously described IEN-12378-50.

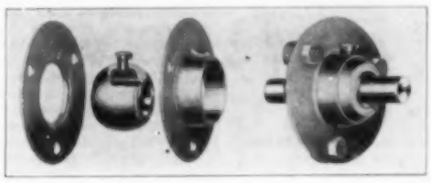
Metal dividers are provided in a kit known as Type AK-8 to make each drawer or tray into two or three lengthwise compartments. A kit contains sufficient dividers for 8 trays measuring 5¾ by 2¾ by 1½ in., lists at 50 cents.

The new cabinet measures 12½ by 6 by 22½ in. and is finished in gray baked enamel. The drawers or trays are molded of clear plastic and are equipped with removable dividers for two or three separate compartments. An index slot is on each drawer front. Index cards are supplied. Built-in catches prevent accidental spilling. Separate cabinet units can be stacked one upon another. The line now includes cabinets with assemblies of 8 to 64 drawers.

If you write maker identify as IEN-8108

BEARING . . Self-aligning flange unit with graphited or sintered bushing

Source: RANDALL GRAPHITE BEARINGS INC.
1009-13 S. Greenlawn Ave., Lima, Ohio



For light duty service

Flange assembly shown in the illustration has been added to the company's plain pillow block bearing, previously described IEN-6258-49. The new unit is available with a sintered bushing for shaft sizes from ½ to 1 in. and with a graphited bushing in sizes from ½ to ¾ inch. The overall assembly measures 3½ in. in diameter by 1¼ in. in length. The flanges are made of 16-gage pressed steel.

The cast iron ball is hollow to provide an oil reservoir when the bushing is pressed into place. This reservoir is packed with SAE No. F-11 wool felt which becomes saturated with oil when the reservoir is filled. Feed to the bearing surface is by capillary action for the sintered bushing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-8109

NO MORE VALVE TROUBLE FROM FOREIGN MATTER!

Here's the valve that closes drip-and-air-tight even when scale, rust or foreign substances are present in the flow and parked on the valve seat.

DeZURIK EASY-OPERATING PLUG VALVES beat the problem of leakage through their exclusive rubber-faced plugs—plugs that provide a dead-shut, cushioned closure even with solids or gums intruding. There's no scoring, sticking, distortion or lubrication . . . and NO LEAKAGE!

The DeZurik Line has a valve for every job; write for catalog.

DeZURIK SHOWER CO.
SARTELL, MINNESOTA

If you write maker identify as IEN-8110

TRAFFIC NEVER STOPS

when you repair your floors with PERMAMIX

Easy to apply—sets instantly—long wearing for year around use indoors or out—WILL NOT FREEZE—can be stored indefinitely and used in any temperature—lowers maintenance costs amazingly.

Here's all you do: Clean hole in any type floor, spread primer supplied in drum, fill in with PERMAMIX, tamp and dust with cement or floor dust, resume traffic immediately. It's that easy, for PERMAMIX feather edges and no cutting or chipping is required. No skilled labor is necessary, you need no special equipment, you have no mixing, waiting or production delays when you repair or patch your floors the easy, fast PERMAMIX way. Comes in handy, durable 50 lb. net weight drums.

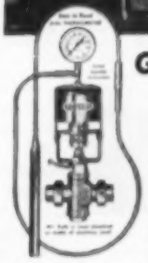
Write or call for full details

PERMAMix

PERMAMIX CORPORATION
230 N. La Salle St. Cent. 6-1785 Chicago 1, Illinois

If you write maker identify as IEN-8111

Below:
Official U. S. Navy Photograph
Michelson Laboratory
Naval Ordnance Test Station
Inyokern, Cal.

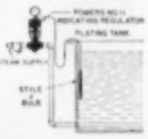


Get BETTER Control SAVE LABOR Reduce Costs with—

POWERS

No. 11 TEMPERATURE REGULATORS

Most of the more than 50 steam heated tanks used in the Navy's modern shops shown above are automatically controlled by Powers regulators. They maintain a constant temperature, end losses caused by OVER-heating, help reduce rough plating, buffing time and decomposition of plating solutions.



Easy to Install—self-operating, have an easy to read 4" dial thermometer which shows temperature of plating solution under control. They are available with either lead sheathed or stainless steel bulbs. Bulletin 329 gives full information.

Compressed Air Operated Indicating Regulator

POWERS Series 100 Regulator

Accurately Controls heating and cooling of plating solutions

Powers has the most complete line of temperature regulators made for metal finishing operations. Contact our nearest office for further information, or

Write for Circular PLN

THE POWERS REGULATOR COMPANY
3427 Oakton Street, Skokie, Illinois (PLO)
Established 1891 • Offices Over 50 Cities • See Your Phone Book

If you write maker identify as IEN-8113

EVER HEAR OF A DOWN-DRAFT BOOTH WITHOUT A PIT?

It's Easy with this Economical, Effective RP Paint Arrestor Installation!

When floor construction made a down-draft booth for painting small industrial equipment items impractical, this manufacturer solved the problem with R.P. Paint Arrestors. And . . . he now has the fourth installation of this type. Many other installations are possible with versatile R.P. Paint Arrestors.

WRITE FOR FREE BOOKLET

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

RESEARCH PRODUCTS CORPORATION
Dept. IN Madison 10, Wisconsin

RP . . . PRODUCTS OF RESEARCH

If you write maker identify as IEN-8114

FOR ZINC DIE CASTING!

• Stop DRIP on front Die with Ring No-Drip • Control!

This control prevents die damage, and costly die repairs caused by metal drip on front die as die opens, regardless of cycle time.

Easily installed, positive in action, trouble-free, it pays its way FAST. Only one moving part.

Ring "NO DRIP" Control is quickly adjusted to different time cycles. It permits free flow on shot stroke, retards speed of plunger on return stroke. This creates a vacuum which withdraws metal from nozzle on upward movement after die separation, preventing "run-out." Leaves a clean sprue with no drip or needle point. No need to run with cold nozzle . . . you get better results!

RING VALVE CO., Inc.
CLAWSON • MICH.
Telephone LIncoln 2-3387

DETAILS ON REQUEST WRITE!

If you write maker identify as IEN-8115

For your high stress Fastening Jobs use Cleveland's EXTRA STRONG High Carbon Heat Treated Cap Screws

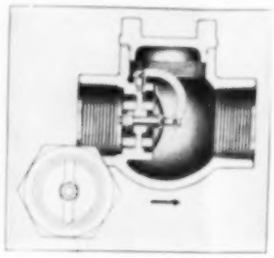
For assembly jobs needing fasteners of high tensile strength, use these tough screws made by Kaufman *Double Extrusion* Process. Complete range of sizes, diameters from 1/4" upward.

CLEVELAND Top Quality FASTENERS
The Cleveland Cap Screw Company
2017 East 79th Street Cleveland 4, Ohio
Warehouses: Chicago, Philadelphia, New York, Providence
ASK YOUR JOBBER FOR CLEVELAND FASTENERS

If you write maker identify as IEN-8116

VALVE . . Back pressure check unit for gas lines, 3/4 to 10 inch

Source: HENRY FLOW CONTROL CO.
3217 W. North Ave., Melrose Park, Ill.



Quickly accessible

The company announces national availability of the Callahan patent back-pressure gas-line valve following purchase of all rights under Patent 2514858. The valve mounts horizontally in a gas line for normal flow at negligible pressure drop on pressures as low as 1 in. of water.

The valve closes and prevents reverse flow when excess pressure is applied on the outlet side. This pressure returns the light weight valve disc to its seat, compressing a small spring in the closing action. When the back pressure is released, the spring will move the disc away from the seat by a small amount to permit passage of pilot operating gas and to prevent the valve from sticking to the seat in the presence of oil or tar. Construction can include either aluminum or stainless steel disc for back pressure to 125 pounds.

If you write maker identify as IEN-8117

PLASTIC MOLDING . . Hydraulic press, 25 to 300 ton, interval timer control

Source: DAKE ENGINE CO.
614 Seventh St., Grand Haven, Mich.

Guided platen design

Platen dimensions, stroke, pressure capacity in an overall range between 25 and 300 ton are subject to specification in the company's new line of hydraulic presses to mold reinforced plastics. Power is supplied in each case by a motor driven pump. Operation is controlled by an adjustable limit switch in the power stroke and by an interval timer that can be set to hold for a curing interval of 12 to 600 seconds. At the end of this interval the movable platen returns to starting position ready for operator actuation at dual palm-operated switches at a front control position. Construction is in welded steel for rigidity.

Identify as IEN-8118

"Welcome, we're glad to see you," says a Little 8-page booklet that is handed out by the receptionist at Dollinger Corporation to visitors calling at her window. The booklet provides a bit of the company's history, illustrates the products, pictures the people making up the organization and offers help. It makes interesting reading while a visitor is waiting for his appointment.

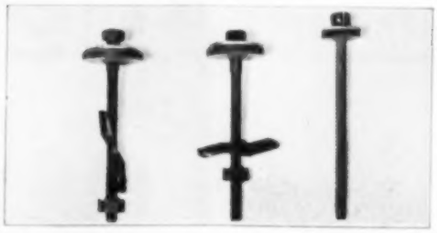
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-8119

A PAID NEWS ADVERTISEMENT BY FABRICATED PRODUCTS CO.

HOLEGRIP FASTENER
(Patent Applied For)

Assembles cement-asbestos corrugated roofing with access to top side only



Assembled fastener, complete with Weath-R-Seal metal-neoprene washer, toggle and nut as shown to the left in the illustration, is inserted through a 1/2-in. hole drilled in the overlapping roof corrugations. The toggle drops to horizontal position, as shown in the center, when it has passed through the hole. Then a power nut runner using a special socket supplied with the fastener draws the nut and toggle up tight on the under side and the washer seals the hole. Average time per fastener is 20 seconds.

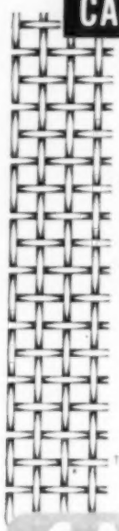
Topseal Fastener (patent also applied for), shown to the right, is used to waster the end laps of sheets to the supporting steel framework. It is conventional self-tapping hexagon-head type with a Weath-R-Seal washer.

Both fasteners are available in carbon steel, zinc or cadmium plated; or stainless steel Type 410 heat treated. The metal portion of the washer can be stainless or galvanized steel or aluminum.

FABRICATED PRODUCTS COMPANY
1952 Water Street · West Newton, Pa.

If you write maker identify as IEN-8120

CAL-WIC WIRE CLOTH



THE RIGHT WEAVE

• • • for every industrial requirement including screening, filtering, grading, cleaning and numerous other types of processing.

THE RIGHT WEIGHT

• • • precision-fabricated for long-lasting dependability and economy.

THE RIGHT METAL

• • • for highest resistance to chemical action, moisture, corrosion, abrasion and extremes of temperature.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC INDUSTRIAL SCREENS CF&I
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN-8121

INDUSTRIAL DOORS "PACKAGED" — Ready to Install

A 3 hour job for any maintenance crew.

Only the Prest-O-Matic comes to you with door and jambs, and all hardware including motor operator, completely assembled. This is your guarantee of perfect performance.

★ OPEN OR CLOSE IN 3½ SECONDS
★ PERMITS FULL USE OF DOORWAY WIDTH
★ NO ALTERATIONS OR FITTING NEEDED
★ SEALED AGAINST WEATHER OR WIND

PREST-O-MATIC

Industrial Doors function faultlessly because they are designed "in balance", utilize thrust and roller bearings and operating mechanism adequate to heaviest usage. Pneumatic, Pull-cord, Floor Plate or Electric Eye optional.

Write for Catalog!

CLARK DOOR COMPANY
519 Hunterdon Street · Newark 8, N. J.

If you write maker identify as IEN-8122

SAFELY CLEAN MOTORS & ELECTRICAL EQUIPMENT WITH FORMULA 602

SAFE ON WORKERS

Formula 602 reduces employee time-loss due to solvent toxicity. Formula 602 is really safe and efficient—use it to clean motors, generators, radio parts, coils, condensers, switches, transformers, etc.

SEND FOR FULL INFORMATION!

SOLVENT REPLACEMENT FOR CARBON TETRACHLORIDE

Eliminate the use of dangerous solvents! Formula 602 is designed to safely replace toxic solvents. It cleans instantly, dries rapidly without a residue and will not corrode metals. Formula 602 completely minimizes fire hazards and the dangers of dermatitis. Use it in wipe, dip or spray application—it's safe and effective for all your electrical equipment.

the PENETONE co.
Box IEN-552
Tenafly, N. J.

If you write maker identify as IEN-8123

IMMEDIATE SHIPMENT

STYLE 300 STACKING BOX

ALL PRICES F.O.B. FACTORY, PHILA.

COMPLETE CATALOG ON REQUEST

Just right for small parts. Light in weight. Easy to handle. Equipped with drop handle each end. Runners save wear on bottom of box and act as positive stacking lock. Will stack with style 700 stacking bin of the same length and width.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
301-20	6"	9"	3½"	20	$ .85	$ .98
302-20	8"	12"	4"	20	$ .96	$1.09
303-19	9"	13½"	4½"	19	$1.20	$1.38

PHONE • WIRE • WRITE

BAldwin 9-1805

BAY PRODUCTS, INC.

3011 N. 16TH ST. • PHILADELPHIA 32, PA.

If you write maker identify as IEN-8124

NEW

The HANDY KNURLER

Save set-up time, operations and parts...Use Handy Knurler for individual knurling jobs—also for certain types of production work.

HAND OPERATED LIKE A PAIR OF PLIERS

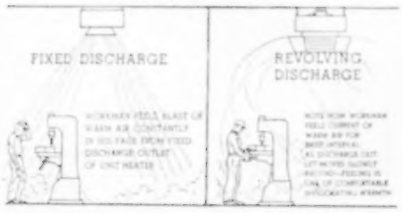
HANDY KNURLER is used with lathe or drill press. Or hold work in vise and rotate Knurler around it. Concentric and off-center surfaces knurled with precision. Worn and undersized armature shafts, axles, spindles, pins enlarged to permit parts to be re-used. Knurled surfaces may be machined. Deep-Cut grooves retained to hold lubricants.

★ Quality heat-treated steel, blued for rust-protection. No other tool like it. Knurler complete with set of 8 knurl rollers for medium diagonal patterns $12.50 postpaid. Different patterned rollers—$8.60 for set of 8. Order direct, or write for literature.

M.P.A. CO., 1678 W. 17th PL., LOS ANGELES 6, CALIF.

If you write maker identify as IEN-8125

What is the BIG difference between revolving and fixed unit heater discharge outlets?



WING REVOLVING UNIT HEATERS are successfully solving the heating problems of thousands of industrial plants today because they assure a uniform comfortable temperature throughout, with no hot blasts, no cold spots, no chilly corners. Instead of annoying hot blasts, the worker is conscious only of a pleasing sensation of fresh, live invigorating warmth.

L. J. Wing Mfg. Co. 160 Vreeland Mills Road Linden, New Jersey

If you write maker identify as IEN-8126

STRAPPING . . Motor driven machine to install in a package conveyor line

Source: ACME STEEL CO.
2854 Archer Ave., Chicago 8, Ill.

Container size can vary

Steel strap is applied, tensioned and secured by two spot welds on filled containers moving over this new machine's roller and ball-equipped top. It stands 31 in. in height to fit in a standard conveyor line. It measures about 45 by 43 in. in floor space and weighs 1,350 pounds. The machine is available for strap measuring ⅝ to ¾ in. in width and to 0.023 in. in thickness. Operation is on 220-volt 60-cycle ac. for the welder and on 110-volt 60-cycle ac. for the controls.

The operator moves the containers, as they approach from the right, into position against a backstop where he holds them with his left hand. He depresses a foot pedal to feed steel strap upward through a slot in the back rest. He guides the strap around the container and back into a slot in the table top to form a complete loop. He then takes his hand from the strap to operate a cycle bar under the control panel at the front center of the machine. This causes the strap to be tightened to a predetermined tension, to be cut from the coil and to be joined by welding. The complete action requires only a few seconds.

Bearing balls in the plates on the two sides of the table slot minimize friction as the operator moves a container or turns it to position it for the next strap. A counting mechanism records the total number of straps applied per day, per shift or per operator. The equipment includes a Type-E17AO reel stand to load 100-lb. coils of strap without lifting.

If you write maker identify as IEN-8127

VALVE . . Bronze gate design, solder ends, ⅜ to 3 in., 125 pounds

Source: AMERICAN CHAIN & CABLE CO.
927-31 Connecticut Ave., Bridgeport 2, Conn.

Steam, water, oil, gas

Figure 90 is a new bronze solder-end gate valve available with a stationary or rising stem and a split or solid wedge. It is equipped with a malleable-iron handwheel and is suited for steam pressure to 150 lb., water pressure to 200 pounds. Nine sizes in the line range from ⅜ to 3 inch. End-to-end dimension is 2 to 6 inches. Center of the body to the top of the handwheel is 2⅝ to 10½ in. in the solid wedge construction. The valve applies with Types K, L and M copper tubing. The body is designed so it will not distort and the seat will not warp under soldering temperatures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-8128

WHENEVER A BLOW IS REQUIRED . . .

consider lightning-fast **ELECTROPUNCH**

Whenever your production process demands a blow, ELECTROPUNCH may be just the machine you need. This all-electric impact hammer delivers a lightning-fast *controllable* blow. Produces up to 10,000 pieces per hour with automatic switching — as high as 5,000 pieces per hr. with hand or foot switching. Ideal for steel stamping, swaging, etc.

ELECTROPUNCH is portable, uses only one sq. ft. of bench space, plugs into any 115 V., A.C. outlet. Lightest model (illustrated) sells for only $90.75.

Write for descriptive folder.

BLACK & WEBSTER, INC.

Dept. 17, 445 Watertown St., Newton 58, Mass.
Phone: Frank Webster Bigelow 4-6370

If you write maker identify as IEN-8129

KNOCKOUT BLOW!

DOWN time for your machinery is OUT time on your profit statement. To keep operation at peak efficiency, keep Dirt, Dust, and Grit out of every crack and crevice. Knock 'em out with a CLEMENTS-CADILLAC blower-suction cleaner—regularly.

Eligible under C.M.P. regulations.

SAVE TIME • MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models . . . with attachments for every cleaning job. . .

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN-8130

WRENN PAPER COMPANY

SELECTS B&S

SHEAR-CUT SLITTER-REWINDER

The Wrenn Paper Company, widely recognized for its high quality products, was faced with the problem of slitting a hard-to-handle material. Clean, square edges and uniformly wound rolls were of utmost importance.

After considering several machines, the Bagley & Sewall #15 Shear-Cut Slitter-Rewinder was selected.

B & S Slitters and Rewinders are doing outstanding jobs in mills and converting plants all over the country. Their many unique money-saving advantages make them the first choice of the industry. Before you buy, *compare*...and your choice, too, will be B & S Slitting and Rewinding equipment.

For full details write to The Bagley & Sewall Company, Watertown, New York.

Inserts show Shear-Cut Slitter Units

BAGLEY & SEWALL

designers and builders of

WATERTOWN, NEW YORK

QUALITY MACHINERY SINCE 1853

Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Ave., New York 20

If you write maker identify as IEN-8132

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

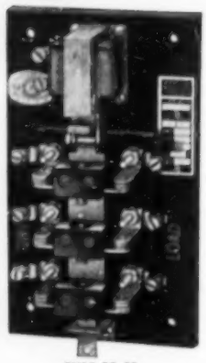
This ZENITH Contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1—25 amps. Size 2—50 amps.

Either size can be supplied in any number of poles.



TYPE SC 33

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith. Write now for your copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN-8133

NEW Amazingly Effective!

CROWN **Rust Inhibitor**
(Pat. Pending)

Spray or DIP

ONE Application Stops Rust for Months*...Retards Rust Already Started....

CROWN Rust Inhibitor is a new and remarkable preventive proved in both shop use and by laboratory tests. Effective against rust caused by humidity, moist hands—even salt spray! ... *Just put it on and leave it on.* Not a messy, smeary oil or hard drying film. Harmless to hands, metal, plastics. Highest quality animal wax base will not gum or clog under heat or friction. Can be used on damp metal. Protects during storage or shipment. Need not be removed from tools or equipment before using. Resists rubbing off, but can be removed easily with gasoline or kerosene ... In aerosol-type can for handy spray application; or apply by dipping.

MONEY SAVING PROTECTION FOR:

- Finished Goods
- Tools
- Stock in Bins
- Spare Parts
- Precision Equipment
- FOR ANYTHING THAT'S VALUABLE AND SUBJECT TO RUST!

*Indoors—in average conditions

ORDER TODAY $2.00 per 12-oz. Trial Can
Discount for cases of 12. Also sold in bulk units for details and discount

CROWN INDUSTRIAL PRODUCTS CO.
402 Berden Ave., Syracuse, Ill.

Please ship at once
.....(New Metal?) cans
.....(New Metal?) cases

NAME
COMPANY
OUR PURCHASE ORDER NO.
ADDRESS
CITY ZONE STATE

If you write maker identify as IEN-8135

TRUCK . . Four wheel platform unit mounts couplers for trailer service

Source: LANSING CO.
600 N. Cedar St., Lansing 12, Mich.

Several make a train

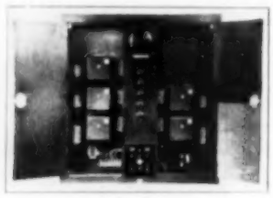
Load rating is 2 ton for this new No. 806 platform truck. It measures 72 by 36 in. and stands 14 in. above the floor on its molded rubber tired wheels. These wheels measure 10 by 3 in. in the two ball bearing swivel caster assemblies. They measure 12 by 3 in. on the rigid units. All four ride on Hyatt roller bearings as standard.

Platform frame is made of a 3 by 2½ in. tee section formed to present 4-in. radius corners and welded into a single piece with 2 by 2-in. platform support angles. The couplers also are welded on at the two ends. Steel pockets for 1-in. pipe are provided at the ends and sides. The deck is made of hardwood dressed to 1¼ inches. Beveled hardwood hold-down strips are employed on the two sides. End racks are provided at the front and rear. They stand 33 in. in height. Weight is 500 pounds.

If you write maker identify as IEN-8136

CONTROL . . Multiple assembly protects oil or gas burner operation

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.



For centralized control

Individual relays for flame detection and associated equipment to safeguard the operation of 2 to 16 oil burners, gas burners or gas piloted oil burners can be set up in this new centralized assembly of the company's Protect-O-Glo equipment. The flame detector and relay circuits act to shut down the fuel supply in the event of flame failure at individual burners.

The equipment can be set up for sequence light-off in which the second pilot valve does not open until the first pilot flame has been proved, in a unison light-off in which ignition of oil burners takes place simultaneously, in an independent light-off in which each burner is individually ignited. Assembly is in a steel housing with lock-equipped hinged doors on the two sides of the central signal and control panel.

Identify as IEN-8137

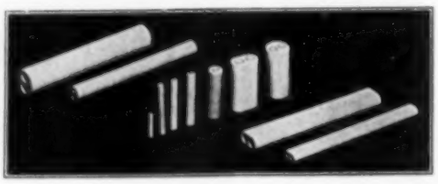
Television control of railroad-yard activities is forecast by DuMont Laboratories in connection wth equipment it has developed to observe and transmit pictures of train movements, switching, signaling, automatic coupling and uncoupling. Cameras set up in the yard transmit pictures to a central control station for operator's information and action.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-8138

A PAID NEWS ADVERTISEMENT BY SAXONBURG POTTERIES

INSULATING . . . New Thermocouple Insulator Development



Representative units are shown

Body formula has been changed in the company's line of insulator units, and a different firing procedure is now employed to produce insulators that will withstand temperatures to 2,400 deg. F. coupled with excellent resistance to thermal shock. The new material is known as the Saxonburg Therm-O Body. The insulators are available in standard and special sizes. Immediate delivery of standard sizes.

The company has informed us that the ceramic units for use in electric heating appliances are suited also particularly well, as thermocouple insulators in which the thermocouples are to operate in temperatures to 2,400 deg. F. Material in each bead type or sleeve-type unit is known as Saxonburg Therm-O Body.

SAXONBURG POTTERIES
51 Della St., Saxonburg, Pa.

If you write maker identify as IEN-8139

Meco

SEALTITE

Instantaneous Waterproofing Seals Leaks in concrete or other masonry walls without removing hydrostatic pressure.

Ideal for waterproofing concrete block walls above or below grade.

for RESERVOIRS — SUBWAYS — BASEMENTS — DAMS — TUNNELS — PITS

Results or no charge.

Manufactured by

MAINTENANCE ENGINEERING CO.
16 W. Johnson Street • Philadelphia 44, Pennsylvania

The makers of the famous

***Meco* BLACK MAGIC SURFACE SEAL**
for Bituminous Paving

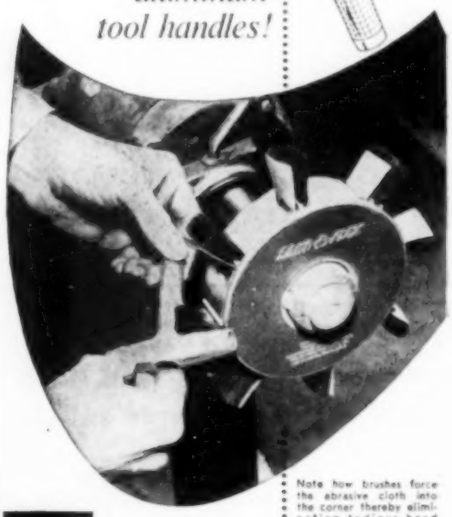
RPE 1442-Pa.

If you write maker identify as IEN-8140

SAND-O-FLEX

beats...

belts, buffs, barrels, backstands and blasting for deburring and finishing aluminum tool handles!



Note how brushes force the abrasive cloth into the corner thereby eliminating tedious hand methods.

THESE cast-aluminum tool handles used on torque wrenches, manufactured by J-O Manufacturing Company, South Gate, California, came out of the mold with a sharp flash and seam around the entire part. Some of the burrs are inaccessible and an extended search was made for a flexible tool that would get in and around the contours without "flatting" or marring the handles. Sand-O-Flex is the only tool that gets down in and around all surfaces. It not only removes the burrs and seams in one pass, but prepares the surface for anodizing.

Sand-O-Flex does so many jobs so much better. If you have a finishing problem on contoured parts, you need Sand-O-Flex. Simply fasten a Sand-O-Flex to any rotating shaft (motor, lathe, electric drill, etc.)—no special equipment necessary. As it spins, brushes cushion the abrasive cloth and mold it to intricate work shapes. A central magazine holds the abrasive cartridge and as it wears, it is fed out by hand in a matter of seconds. Abrasives are furnished in many grits for a wide variety of finishes on all types of metals. With heavier grit fillers, Sand-O-Flex is also ideal for removing tool marks, rough-grind marks, and for deburring complex steel surfaces. Four models—from small portable applications to heavy-duty production line uses. For free catalog and prices, write to

MERIT PRODUCTS, INC.
4023 Irving Place, Culver City, California

If you write maker identify as IEN - 8142

MERCURY SWITCHES by MERCOID

Assure Accuracy, Positive Operation and Long Life

TILTING TYPE MERCURY SWITCHES

The original method consisting of a simple tilting movement for opening and closing the circuit is still largely the basis of operation in most mercury switch applications.

Figure 9-51 (illustrated—one of the most popular types) is a mercury to mercury contact switch. One electrode terminates in a pool of mercury within a cup of high temperature refractory material. The other electrode is submerged in the main body of mercury, and as the switch is tipped, these two pools of mercury join and close the circuit. Even when operated very slowly, the contact opens or closes with a positive and instantaneous action as the mercury joins or divides. The electric arc is confined to the lip of the high temperature refractory cup, so that no deterioration can occur.

Further information sent upon request.

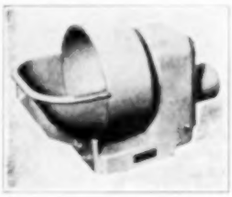
THE MERCOID CORPORATION • 4217 BELMONT AVE. • CHICAGO, ILL.

If you write maker identify as IEN - 8143

AUTOMATIC HOPPERS

and

ASSEMBLY MACHINES



for

1. Machining
2. Assembling
3. Packaging
4. Sorting

We have helped many companies to lower their production costs.

Our experience in design of automatic equipment is available to you.

SEND US YOUR PROBLEMS

KRAUS DESIGN INC.

Designers and Builders of Automatic Machinery

948 Exchange Street Rochester 8, N. Y.

If you write maker identify as IEN - 8144

Its all in the *Heat Treatment*

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

We are also manufacturers of—
- Special branding and knurling wheels
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

WRITE TODAY for ADDITIONAL INFORMATION

PITTSBURGH STENCIL and TOOL COMPANY

REEDSDALE and SCOTLAND STREETS

PITTSBURGH 12, PA.

If you write maker identify as IEN - 8145

SANDING . . Belt type machine for portable use, collects own dust

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Salina St., Dept. PR-6, Syracuse 8, N. Y.

Belt is changed quickly

Model 503 is a new portable sanding machine that employs a 110-volt universal motor to drive an abrasive belt measuring 3 in. in width by 24 in. in length. Belt speed is 1,120 fpm. Adjustment is provided for correct belt tracking. Assembly includes a turbine exhaust fan that picks up dust developed by the sanding action and delivers it into a bag at the rear.

The machine also draws cooling air in through a grille in the housing and exhausts it to keep the operating parts from overheating. The housing is made of aluminum. It measures 16¾ by 5½ by 8 inches. Weight is 15 pounds.

If you write maker identify as IEN - 8146

LUBRICATING . . Wax in stick form for use on cutting tools, fastenings

Source: DOALL CO.
252-56 N. Laurel Ave., Des Plaines, Ill.

Also helps grinding

Tool Saver designates a new lubricant in wax form. It is packaged in a tube measuring 11 by 2 in. and is applied directly to the cutting edges of a tool, to the surface of a material to be machined or on the threads of a fastening. As the wax is used up it is pushed out of the enclosing cylinder to present a fresh supply. The cylinder keeps the unused portion clean.

If you write maker identify as IEN - 8147

INSULATING . . Fiberglas tube, silicone rubber coated, is flexible

Source: BENTLEY HARRIS MFG. CO.
1002 Bentley St., Conshohocken, Pa.

To 7,000 volts per mil

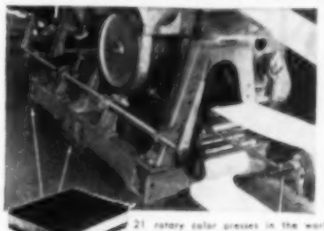
Type BH-1151 designates a flexible tube for circuit insulating uses in motor manufacture and repair, in hermetically-sealed relays, engine ignition circuits. The tube retains its flexibility and rated dielectric strength through a temperature range between minus 90 and plus 400 deg. F. It will withstand temperature to 600 deg. F. for intervals.

The material meets NEMA Class H specifications. It is completely inorganic and will not support fungus growth. Coils, 36-in. lengths, or short pieces cut to specification are available in natural color or in colors that can be used to code.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8148

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



21 rotary color presses in the world's largest label printing plant are mounted on Korfund Elasto-Rib—without cementing or bolting. Result—perfect register and quiet operation.

NO BOLTING

NO CEMENTING

LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

THE KORFUND COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty Second Place, Long Island City 1, N. Y.

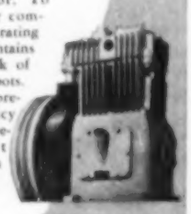
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write maker identify as IEN - 8149

Keeping Your QUINCY Compressor Running is Our Job

That's right! It's our responsibility to see that you get maximum service from your Quincy Compressor. To help keep your air compressor at peak operating efficiency, Quincy maintains a nation wide network of Authorized Service Depots. These depots carry a representative line of Quincy parts. Each depot is prepared to give you fast efficient service. You can depend on it!

AUTHORIZED Quincy COMPRESSORS SERVICE

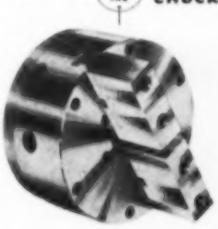


Quincy COMPRESSORS

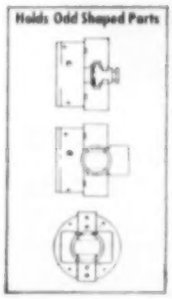
QUINCY COMPRESSOR CO., Dept. H-2, Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago • St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 8150

Buck ADJUST-TRU CHUCKS



NEW 2-JAW AVIATION CHUCK



THIS is the slickest way ever devised to hold irregular shaped parts for duplicate machining operations within *0001 precision.*

The master jaws have *soft* top jaws which you machine to hold your specific work, then harden if you wish. That's not new. But the way the Adjust-Tru principle saves time on accurate rechucking is truly amazing. The jaws move in and out simultaneously to grip the work with a *single-pinion* action — just like any scroll chuck.

You make but one adjustment for precision when you start your run — then re-check with scroll chuck speed without further adjustment.

Ask for a catalog with full details.

BUCK TOOL COMPANY

716 Schippers Lane

KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 8151

FREE MANUAL *tells how* **DY-NAMIC BALANCING CAN IMPROVE YOUR DEFENSE PRODUCTION!**

This New "Bear" Manual will show you how Dy-Namic Balancing can aid your defense production program these two ways:

1 Improve finished product performance by eliminating mechanical failures and assuring greater efficiency and longer life. Gives you the quality standards to help meet many government contract specifications.

2 Keep your own equipment operating without interruption. Periodic checking and Dy-Namic Balancing of rotating parts in your machinery and production equipment will reduce bearing wear and noise and eliminate costly downtime for repairs.

Write today for your free copy. Bear Mfg. Co., Dept. 1-5, Rock Island, Illinois.

24 PAGES OF VALUABLE INFORMATION LIKE THIS:
- How To Balance Parts From 4 Oz. to 8 Tons!
- What Is Dy-Namic Un-balance?
- The Difference Between Static and Dy-Namic Un-balance!
- How To Balance Rotating Parts Statically and Dy-Namically In One Operation!
- How Other Plants Are Using Dy-Namic Balancing To Save Time and Money!
- How Dy-Namic Balancing Improves Product Performance!
- How Dy-Namic Balancing Reduces Wear, Eliminates Noise And Vibration.
- Details, Specifications And Engineering Data About Complete Line of "Bear" Industrial Dy-Namic Balancing Machines.

"BEAR" STATIC AND DY-NAMIC BALANCING MACHINES

If you write maker identify as IEN - 8152

Solve "small parts" assembly problems

• Assemble • Press
• Rivet • Stake
• Punch • Mark . . .

with ½ ton or 1 ton Han-D-Press the new Hannifin air-operated bench press.

Write HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Illinois

If you write maker identify as IEN - 8153

FINGER-TIP HANDLING SPEEDS DELIVERY To GraybaR CUSTOMERS

From warehouse stock to delivery truck, heavy loads are quickly transferred by finger-tip control with this American MonoRail Overhead Handling System.

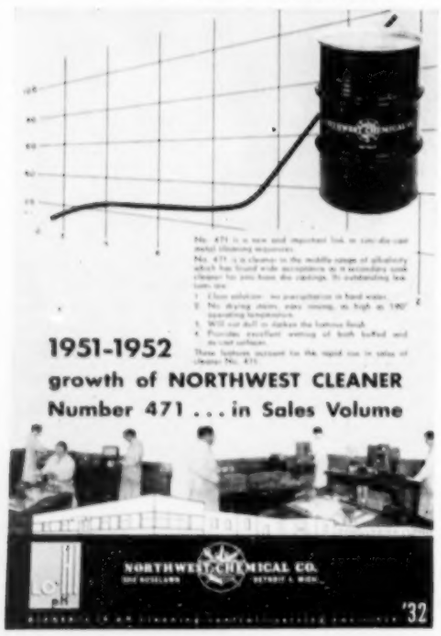
In addition to speeding up loading and unloading time, this simple inexpensive system cut handling labor, improved space utilization, reduced material damage, and bettered working conditions.

It can be done in your plant and an American MonoRail engineer will gladly tell you how.

THE AMERICAN MONORAIL COMPANY

13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as IEN - 8154



If you write maker identify as IEN - 8155

MOTOR . . Vertical, hollow shaft, to 5 hp. for deep well turbine pumps

Source: U. S. ELECTRICAL MOTORS INC.
202 E. Slauson Ave., Los Angeles 54, Calif.

Ask for Bulletin SCU

Types SCU-C and SCU-R designate new single-phase capacitor-start motors ranging from 1½ to 5 hp. and operating at speeds of 1,800 or 3,600 rpm. The mechanical construction is similar to the enclosed vertical three-phase motor, previously described IEN 2188-49, in which a ball-thrust bearing at the top of the assembly takes the weight of the pump rod. A clutch prevents unthreading the suspending nut at the upper end of the shaft in the event of motor reversal. A Ballomatic backstop prevents weight of water in the discharge line from running the motor backward when delivery is shut off.

Capacitors are enclosed under the top housing cap. The accelerating type relay in the starting circuit is assembled in dust-tight design within the outlet box where it is quickly accessible. The ball bearings are grease lubricated in an arrangement so newly-injected grease purges old grease.

If you write maker identify as IEN - 8156

METER . . Sensing element measures flow rate of molten metals

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Assembles in flow line

Illustrated is a new magnetic sensing element for application with potentiometer type indicating or recording equipment, normally supplied by the user, to measure flow of molten metals such as sodium, lead-bismuth, sodium-potassium alloys. The element consists of a permanent magnet and a 30-in. length of stainless steel pipe. The pipe is centered between the magnet pole faces by means of stainless steel supports and is connected into the metal flow line.

Metal moving through the pipe cuts the magnetic lines of flux set up by the magnet, generates a small directional voltage in the pipe proportional to the amount of magnetic flux. This voltage is picked up by two stainless steel wires for connection to the indicating or recording instrument.

The head measures 3 by 5¼ by 6 inches. The pipe can be specified at ½, ¾ or 1 inch. Accuracy is within 3 per cent.

Identify as IEN - 8157

A Teflon sheet measuring 60 by 72 in. has been produced in a single piece at the Electronic Mechanics plant. Now it is possible to make really big jointless gaskets of the chemically-inert material. The sheet also makes an excellent table top cover where chemicals are being handled.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8158

"...On the feet of Individuals."

Society advances on the feet of individuals. We Americans live under the highest standard ever achieved because we believe in and are permitted currently to practice three cardinal principles of progress—Invention, Research and COMPETITION.

Nineteen basic inventions influence our pattern of life today. Each one was created to satisfy a fundamental need. For example, the electric light industry has grown to an annual volume of $501,500,000 in light bulbs alone; the value of aviation manufactures in 1951 in the United States alone was estimated at $5,550,000,000 and in February, 1952, records show a $10½ billion backlog of orders. In every case, employment and sales volume grew enormously and the public enjoyed huge personal benefits.

Side by side with Invention came Research, exemplified by the competition of intelligent men questing for new materials, methods, processes, scientific truths. Current advertisements tell of medicines that cure "incurable" diseases, food processes that cook, sterilize and pack hundreds of cans a minute. And in every case, the public enjoys huge personal benefits.

Inventions, marketing and research require substantial investments. A grave danger to their future now looms. In 1951, corporation net profits suffered a loss of 21% over the previous year. The reason—taxes too high, government controls and policies that interfere too greatly with private industry. If this continues, financial resources will dwindle, competition will be stifled.

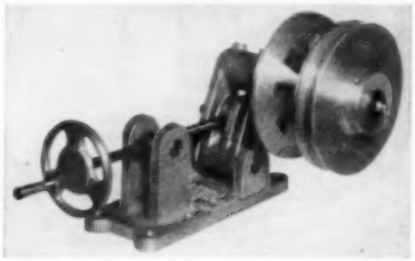
We need competition to assure progress for people.

This report on PROGRESS-FOR-PEOPLE is published in this magazine in cooperation with National Business Publications, Inc., as a public service.

THE COMPETITIVE SYSTEM DELIVERS THE MOST TO THE GREATEST NUMBER OF PEOPLE

If you write maker identify as IEN - 8159

New! HAND WHEEL CONTROL TeeCo VARIABLE SPEED TRANSMISSION



Ideal for single groove V-Belt applications. The TeeCo Transmission is designed on the variable pitch pulley principle. Infinite ratios may be obtained between its range. Simply by turning the adjusting wheel, the tension on the belt is changed to shift the middle wheel automatically to change the pitch diameters. Adjustment may be made without stopping either motor or machine.

All aluminum construction. The TeeCo Transmission is shipped all assembled, ready to install. Attractively low priced! Write for additional information and literature.

USES:
Light Machine Tools
Wood-Turning Tools
Printing Presses
Photographic Processing Equipment
Food Processing Machinery
Production Line Conveyor
Materials Handling Conveyor

TURNER UNI-DRIVE COMPANY

3401 Terrace Street, Kansas City 8, Missouri

If you write maker identify as IEN - 8160

You can salvage Valuable Parts—

—FOR LESS THAN 25¢!

Including Labor, Materials, Burden

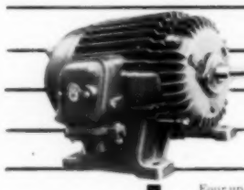
Elox Electron Drills* are *production* machines designed for fast removal of broken taps, drills, studs, etc., without harm to thread or wall, sticking or welding. Most units are completely self-contained, easily transported and come ready to plug in. As simple to operate as any drill press, Elox Electron Drills* are an insurance against loss of time, money and materials. Throughout the world, Elox machines salvage millions of dollars of work each year. Check your scrap today. There's an Elox Electron Drill* priced for any industrial requirement. Write today.

ELOX CORPORATION OF MICHIGAN
730 N. Rochester Road
Clawson, Mich.

If you write maker identify as IEN - 8161

ACEC

Electric Motors are backed by



70 YEARS' DESIGNING AND ENGINEERING EXPERIENCE

NOW ON HAND
Integral Horsepower Electric Motors — conforming strictly to NEMA SPECIFICATIONS

FULLY GUARANTEED

MOTORS EXCEEDING 200 HP. BUILT TO ORDER

Four up-to-the-minute plants producing the finest type electrical equipment, that's ACEC — Ateliers de Constructions Electriques de Charleroi, Belgium.

And world-famous ACEC motors are now *immediately available* to American customers from warehouse stocks in the United States.

In addition, a network of ACEC Distributors and Service Shops, from coast to coast, is prepared to handle customers' service needs promptly and efficiently.

Whatever your motor requirements, write, wire, or telephone the nearest ACEC office or representative.

IMMEDIATE DELIVERY from NEW YORK • CHICAGO • KANSAS CITY
NEW ORLEANS • DALLAS and LOS ANGELES Warehouses

BELGIAN ELECTRIC SALES CORPORATION
Main Office: ONE E. 53RD ST., NEW YORK 22, N. Y. • PLAZA 8-3105

BRANCHES AND AGENCIES: Los Angeles • San Francisco • Chicago • Kansas City • Cleveland • Houston • New Orleans • Pittsburgh • Louisville • Washington, D. C. • Youngstown • Savannah • Montreal • Puerto Rico • Mexico City

If you write maker identify as IEN - 8162

wheelco instrumentality

SHUT-OFF INSURANCE

wheelco limitrol

For Improved Instrumentation—add the Limitrol to your control applications! Here's economical insurance to prevent temperatures from rising above the danger point during processing. The Wheelco "electronic link" provides instantaneous shut-off action for automatic safety.

Write for LIMITROL BULLETIN LIM-1
wheelco instruments division
BARBER-COLMAN COMPANY
ROCKFORD, ILLINOIS

wheelco electronic controls

If you write maker identify as IEN - 8163

FUMES
FOUL AIR
SMOKE

INDUSTRIAL AIR CAN SOLVE YOUR PROBLEMS

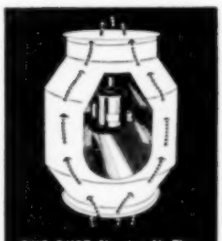
BELT DRIVEN DUCT FAN

For spray booths, volatile or explosive fumes, excessive temperatures, dust or any operation requiring the motor to be out of the air stream.

JOB fitted DUCT FANS in sizes from 14" to 72" in diameter and from 1000 to 100,000 C.F.M. Also to your specifications and job needs.

Belt Driven Duct Fan. Powered by Recognized Accepted Make Motors. High Tensile Strength Cast Aluminum Blades.

The Industrial Air Duo Duct is specially designed to exhaust corrosive gases, fumes, smoke, and to induce draft on boilers. It has two exhaust ducts joined at both the suction and discharge ends. Both motor and bearings are mounted in the internal well, protected from the harmful corrosive effects of exhaust air, smoke or fumes. The internal well is open on two sides for proper and efficient cooling. The entire unit is designed for temperatures as high as 700° Fahrenheit and is available in diameters from 14" through 72", 1000 to 100,000 C.F.M.



DUO DUCT Showing Air Flow

Tubeaxial
Vaneaxial
Utility Man Cooler
Portable Man Cooler

Duct Fans
Roof Ventilators
Duct Type Fan
Duo Duct

INDUSTRIAL
Represented in All Principal Cities
Write Dept. 702 for Catalog of Complete Line

THE HARVEY P. BERTRAM CO.
1008 W. Ninth St. Cincinnati, Ohio

If you write maker identify as IEN - 8165

CONVEYING . . Overhead chain trolley operates on track in closed circuit

Source: ROCKFORD PRODUCTS CO.
11627-43 Klinger Ave., Detroit 12, Mich.

Wheels are machined to ride an I-beam flange and are mounted on sleeve bearings to ride studs drilled for grease lubrication in this new trolley. The trolley housing is made of pressed steel and is designed to operate in connection with the company's standard drop forged rivetless conveyor chain. Trolley and chain are available for a specified installation. Special load supporting fittings also can be specified.

If you write maker identify as IEN - 8166

BRAZING . . Silver alloy for use on copper, brass and bronze

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Illustrated details in Bulletin B-5454

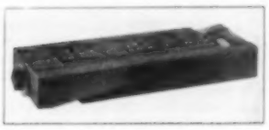
Phos-Silver trade names a new alloy of copper, phosphorus and silver for application by any of the usual methods of brazing to join parts made of copper or copper alloys. Brazing temperature employing the alloy is 1,225 to 1,275 deg. F. The new material is available in the form of rod, coils, rings, ribbon. Wire diameter ranges from $\frac{1}{16}$ to $\frac{1}{4}$ inch. Two rod lengths are 18 and 36 inches. Rings are available in minimum quantities of 10,000 in specified sizes. Samples will be sent upon request.

Phos-Copper alloy, previously described IEN 4575-36, is now available in paste as well as solid form. It is packaged in 1-lb. tubes and in 5 and 30-lb. cans. It consists of finely powdered alloy suspended in a petroleum jelly. A small amount of this paste is placed between two pieces being joined and the joint is heated until the brazing metal flows.

If you write maker identify as IEN - 8167

JACK . . Screw operated wedge for machine leveling on uneven floor

Source: FILTER & INJECTOR CO.
1402 E. Tampa, Dept. IEN, Springfield, Mo.



Locks in place

Two sizes measuring 6 and 8 in. in length by $2\frac{1}{2}$ and 3 in. in width are included in a new wedge-type machine-leveling jack known as the Lev-Ler. The smaller unit provides $\frac{5}{8}$ in. of vertical adjustment in $2\frac{1}{2}$ in. of longitudinal movement. The larger unit rises through $\frac{1}{2}$ in. in 3 in. of movement. Load capacity is 3 and 5 ton. Weights are 5 and 10 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8168

Immediate delivery military controls

Includes
JAN-R-94
JAN-R-19
types of military variable resistors and non-JAN controls

UNPRECEDENTED PERFORMANCE CHARACTERISTICS
Designed for use in military equipment subject to extreme temperature and humidity ranges, many of these controls are widely used in:

JET AND OTHER PLANES
GUIDED MISSILES
TANKS
SHIPS AND SUBMARINES
TELEMETERING
MICROWAVE
PORTABLE OR MOBILE EQUIPMENT
ALL OTHER MILITARY COMMUNICATIONS

167 types

Immediate delivery from stock on all 167 types. For complete list, description, photos and performance characteristics:
WRITE TODAY FOR STOCK SHEET NO. 162

FOUNDED 1896 • CTS • ELKHART, INDIANA

CHICAGO TELEPHONE SUPPLY Corporation

specialists in precision mass production of variable resistors

If you write maker identify as IEN - 8169

for *Complete* Hopper Efficiency

SYNTRON

1. Hopper Level Switches

Eliminate spillage and shortage of materials. Automatically maintain desired levels of materials—from fine to coarse—in bins and hoppers. Control feeding.

2. Electric Vibrators

Assure free-flowing bins, hoppers and chutes. Eliminate arching and plugging of materials without hammering and rodding that damages equipment and wastes manpower.

3. Flow Control Valves

Control flow of bulk materials from bins, hoppers and chutes. Rotating control lever increases or decreases opening of flexible iris type diaphragm and flow of material without jamming or clogging.

Write for FREE Illustrated Folders

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 8170

▶ SAVE HANDLING TIME
▶ AVOID CONFUSION
▶ FACILITATE STORAGE

The MHS Work Carrier is a sturdy, flexible device for the transfer, storage or shipment of work parts or sub-assemblies. Stacked vertically, by means of the nesting plugs of the corners, these units constitute a rigid storage bin structure. Mounted on casters, they serve as factory trucks for the transfer of parts between processes. They are easily handled by the conventional lift truck or crane.

Write for Catalog R 2 for detailed specifications.

Mechanical Handling Systems, Inc. MHS
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

If you write maker identify as IEN - 8171

Because they are all metal and require no auxiliary locking device, FLEXLOC Locknuts *lock* and *stay locked* even at higher temperatures. Write for descriptive literature and samples. STANDARD PRESSED STEEL CO., Jenkintown 14, Pennsylvania.

FLEXLOC LOCKNUT DIVISION **SPS** JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 8172

NEW MEAD INDUSTRIAL
AIR POWER
CATALOG Ready!

Full of Suggestions for FASTER, CHEAPER PRODUCTION!

Illustrated, describes Air Cylinders, Valves, air operated Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. *Pneumatic Cylinders.

Write for Complete Catalog!

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-72, CHICAGO 41, ILL.

If you write maker identify as IEN - 8173

Chem-Board Tote Boxes
HELP BUILD AIRCRAFT . . .

Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Convoy Chem-Board Tote Boxes. The nesting boxes illustrated are stored in minimum space while awaiting new loads.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is fiber hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

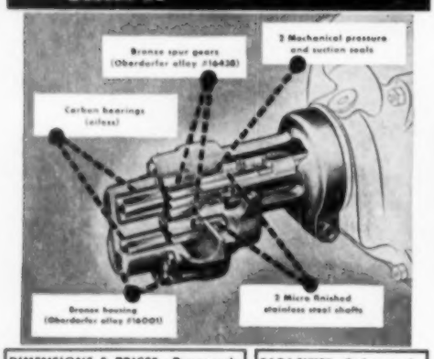
The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made Nesting - Stacking - Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

If you write maker identify as IEN - 8174

INTERNATIONAL Series II BRONZE PUMPS



DIMENSIONS & PRICES – Pump only

Pump No.	Ht.	Width	Lgth.	Price
1½ CCC	17⅛"	21 11/16"	4¾"	$20.00
2 CCC	21 11/16"	23⅝"	4½"	22.50

Complete units with ½ hp. 110 volt AC thermal overload motors (motor standard, but specially machined for pump mounting) . . . prices on request.

See our catalog in Sweet's File for PRODUCT DESIGNERS

CAPACITIES – Gal. per min. 1725 rpm – lbs. sq. in.

Press.	1½ CCC	2 CCC
0 lbs.	2.00 gal.	4.00 gal.
25 lbs.	1.83 gal.	3.67 gal.
50 lbs.	1.67 gal.	3.17 gal.
75 lbs.	1.33 gal.	2.83 gal.
100 lbs.	1.10 gal.	—

Oberdorfer Foundries, Inc., Ind. Pump Div.
1127 Thompson Rd. Syracuse, N. Y.

If you write maker identify as IEN - 8175

HOIST . . Electric chain design, ¼ to 1 ton, has pushbutton control

Source: CHISHOLM-MOORE HOIST CORP.
6002 Fremont Ave., Tonawanda, N. Y.

$253 to $319 as shown

Five sizes in the company's Comet line of electric chain hoists with ratings from 250 to 2,000 lb. are now available with pushbutton control. These units have been added to the line regularly employing pendant rope control, previously described IEN-6898-38. Maximum lift with the pushbutton assembly is 30 ft. on single chain design, 15 ft. with double chain. A hoist with a special upper and lower limit switch can be specified to permit maximum lift to 100 ft. on single-chain models and to 50 ft. in the double-chain assembly. Installation can be made for operation on 110 to 440-volt single to 3-phase 60-cycle ac. The control circuit operates at 110 volts.

The smallest hoist employs a ¼-hp. motor for lifting speed of 35 fpm. Shortest distance between the hooks in the design shown in the illustration is 14¼ inches. The 1-ton assembly has a ½-hp. motor and operates at 9 fpm. Its shortest distance between hooks is 19¼ inches. Intermediate units in the line include two rated at 500 hp. with lifting speed respectively at 17 and 35 fpm., a 750-lb. assembly operating at 17 fpm. and two 1,000-lb. assemblies operating at 11 or 17 fpm.

Feature in the construction is the fact that the ball bearings are factory lubricated and sealed so no field attention is required. The gears operate in a grease-tight housing in a special non-aging grease that does not require replenishing. The swivel-hook bearings also are enclosed and permanently lubricated. The only lubrication required is an occasional greasing of the load chain.

The reversing controller is solenoid operated for actuation by the pushbuttons. It returns to neutral when either pushbutton is released. A mechanical interlock makes it impossible to close the circuit for operation in both directions simultaneously. Detail illustrated information covering the line is contained in 20-page Bulletin 150.

If you write maker identify as IEN - 8176

PLASTIC . . Teflon shaved tape, also beading, rod, sheet and tube

Source: ETHYLENE CHEMICAL CORP.
243-47 Broad St., Summit, N. J.

Size and price upon request

New sizes and forms have been added to the company's stock lines of Teflon plastic for use in equipment and plant application. The chemically inert material machines readily in manufacture of equipment parts. Its high dielectric characteristics are suited for use in electrical and electronic apparatus. It can be employed in a temperature range between minus 320 and plus 500 deg. F. It is non-adhesive, resists corrosion and weathering. Its coefficient of friction is low.

Shaved tape is carried in stock in a range of thicknesses between 0.002 and 0.06 inch. Molded sheets range from 1/16 to 2 in., molded round tubing from 1⅛ to 20 in. in outside diameter with corresponding inside diameters at ⅜ to 18¾ inches. Beading is available in sizes from 1/64 in. to 4.4 mm. in diameter. Extruded rod ranges from 1/16 to 1¼ in. and molded rod from 1⅜ to 6 inches.

If you write maker identify as IEN - 8177

TRUCK . . Drum lift attachment rides the forks on a power lift truck

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Operator remains seated

Steel frame with integral front hooks and spring-backed sliding rear hooks makes a new drum-handling attachment for application on the company's fork lift trucks. The frame clamps to the forks and rises with them to bring the hooks into carrying position. The operator tilts his carriage back to lift the front hooks so the rear ones can be brought in contact with a pair of drums, either the same or different sizes. Then he moves the truck forward against the spring action so the hooks move toward the rear until the front integral hooks can be lowered by tilting the frame so they also can grip. At this point the operator reverses the truck a little until both drums are engaged. He can lift them at this point for transportation to a new location.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8178

ACE PLASTIC EXTRUSION

Extruded parts from the raw material to the finished product . . . an Ace specialty. Ace Plastic rods, tubes and shapes are custom extruded and machined automatically to your most exacting specifications. Let our engineers assist you with your plans.

WRITE TODAY FOR SAMPLES, send prints for quotations.

By the manufacturers of famous Ace Nylon Balls

ACE PLASTIC COMPANY
Precision Plastic Fabricators and Extruders
91-24 Van Wyck Blvd. • Jamaica 2, N. Y.

If you write maker identify as IEN - 8179

Why move work around TO GET TO PRESENT EXHAUST DUCTING?

Take SPIRATUBE® to the job!

With SPIRATUBE – the new-type flexible ducting – you can set up production lines where you want them without expensive changes in your dust or fume removal system. SPIRATUBE connects quickly, easily to your present lines – and bends anywhere with minimum crimping. No turn is too short, no angle too acute. No elbows or special fittings to bother with in going around obstructions.

Best of all, YOU CAN INSTALL SPIRATUBE YOURSELF! That cuts down-time, keeps your production line going. The initial cost of Spiratube is small . . . and its life equals – sometimes exceeds – rigid ducts.

Standard sizes for all requirements are immediately available from well-stocked distributors – coast-to-coast!

For all ducting systems:
SPIRATUBE® FLEXFLYTE® AYRTUBE®

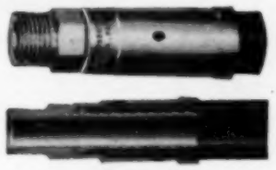
Flexible Tubing CORPORATION
Guilford, Connecticut Pasadena 1, California

FREE! Full details on this amazing, cost-saving ducting. Fill in coupon and mail.

Please send me your new catalog on Flexible Tubing products.
My application is _____
Name _____
Title _____
Company _____
Address _____
City _____ State _____ IEN-1

If you write maker identify as IEN - 8181

Longer Service Life for Hydraulic Hose!



"PRESS-LOCK"
HYDRAULIC HOSE COUPLINGS

Write for literature completely describing the super-strong, super-efficient "Press-Lock" Coupling. Available on Mulconroy Hydraulic Hose Assemblies for all types of equipment, or attached to *your* hydraulic hose shipped to our factory.

"Mulconroy Starts Where Others Stop"

MULCONROY COMPANY
Hose Specialties Since 1887
5327 JEFFERSON ST., PHILA. 31, PA.

If you write maker identify as IEN - 8182

CUT WORK GLOVE COSTS AT LEAST 40%

"Riegel's NEW 'PLASTIC-DOT' WORK GLOVE SAVES YOU OVER 40%"

That's not just a slogan—it's a fact. It's a fact supported by the U. S. Testing Co., by on-the-job comparison, and by Riegel's own laboratory tests.

The new Riegel "Plastic-Dot" work glove outwears standard 10-ounce canton flannel gloves more than 2 to 1 . . . reduces costs at least 40%.

Return our coupon for full information and an illustrated catalog showing the complete line of Riegel Work Gloves for every need.

RIEGEL TEXTILE CORP. • 260 Madison Ave., New York 16
Atlanta • Boston • Chicago • Dallas • Detroit • Los Angeles
Jackson (Miss.) • Pittsburgh

RIEGEL TEXTILE CORP., 260 Madison Ave., New York 16, N. Y.

Send complete data on Riegel's new "PLASTIC-DOT" Work Glove, and free sample of "Plastic-Dot" fabric to:

Mr. _____

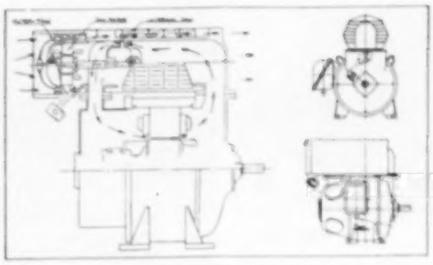
Company _____

Address _____

If you write maker identify as IEN - 8184

MOTOR . . Adjustable speed dc., with motor operated heat exchanger

Source: RELIANCE ELECTRIC & ENGINEERING CO.
1111 Ivanhoe Road, Cleveland 10, Ohio



Technical data upon request

Dual Cooled designates a new line of totally enclosed dc. motors for adjustable speed duty in ratings to 150 hp. The motors are suited for speeds between 200 and 1,800 rpm. The new design can be employed for ranges of as much as 100 to 1 under certain conditions.

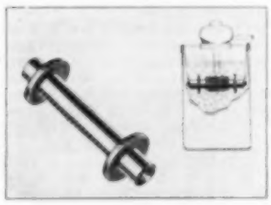
Construction is featured by a heat exchanger that mounts in single and double assembly on the motor frame in connection with a blower equipped motor rating 1½ hp. for operation on 3-phase 60-cycle ac. The motor is a 3,600-rpm. unit and is connected to drive both internal and external blowers independently of the main motor.

The internal blower sets up air circulation in a closed circuit at 2,800 fpm. to pick up heat from the motor windings. The external blower drives cooling air through the external path between the exchanger fins and under its enveloping cover at 3,300 fpm. to carry the collected heat away. The cover is designed so it can be removed to assist in cleaning should this ever be required. The internal circuit handles only clean air and will not become contaminated.

If you write maker identify as IEN - 8185

MAGNET . . Permanent unit suspends beneath coolant pump intake

Source: MULTIFINISH MFG. CO.
2114 Monroe Ave., Dept. 392, Detroit 7, Mich.



Model 121 is $16.50

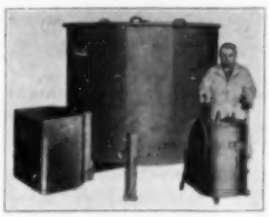
Magnetool trade names a new permanent magnet measuring 1¼ in. in diameter by 8 in. in length. It is designed to suspend beneath the intake of a coolant circulating pump. In this position it attracts and holds ferrous particles that are in suspension in the coolant so they will not enter the pump. Flanges are mounted to slide on the magnet and wipe it clean at intervals.

A mass of chips measuring 4½ in. in length by 1 in. in thickness can be accumulated around the entire circumference before removal is necessary. Accumulating weight causes rotation for even distribution. Application is on equipment such as tool room grinders and lathes and machines used in light production drilling and threading. The magnet is not suited for heavy duty production grinding.

If you write maker identify as IEN - 8186

CLEANING . . Washing machine whirls solvent around work in basket

Source: GRAYMILLS CORP.
3703-7 N. Lincoln Ave., Chicago 13, Ill.



Details in Catalog 1

Vertical impeller at the bottom of the solvent chamber in this new Wirl Agitor washing machine is mounted on a shaft that rides in ball bearings beneath the chamber and is belt connected to a driving motor. The rotating action sets up a strong current of the cold cleaning solution around and between work pieces in a basket suspended from the top of the chamber. At the end of a cleaning interval the basket is raised manually and hooked on the side of the chamber so the work can drain.

Eight sizes in the line range from portable units mounted on casters and holding 5 gal. of solvent to stationary equipment holding 330 gallons. Diameter ranges from 12 to 58 inches. The driving motor has ½ to 5-hp. rating.

The machine can be cleaned by placing a collector screen inside the work basket and starting the impeller action. Solids in the solvent collect in the screen for removal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8187

A Mercury Automatic Clutch installed on a Textile Gig

The Mercury Automatic Clutch is the perfect solution to prevailing power transmission problems on textile machinery . . . and wherever an electric motor or gasoline engine provides power for machinery or equipment.

4 REASONS WHY A MERCURY AUTOMATIC CLUTCH IS A GOOD INVESTMENT:

- ***UTILIZATION OF MAXIMUM MOTOR TORQUE***
- ***PROVEN DEPENDABILITY***
- ***SAVING OF MOTOR COST***
- ***INCREASED PRODUCTION***

Get the full story on the Mercury Clutch. Write today for Mercury Catalog C-11.

MERCURY CLUTCH DIVISION
AUTOMATIC STEEL PRODUCTS, INC.
CANTON 4, OHIO

If you write maker identify as IEN - 8188

NEW! Tester For Pressure of RAM-ON-WORK

For Determining Total Weights or Total Pressure on All Types of Presses

STUDEBAKER TOTAL PRESSURE TESTER

- **Accurate reading**
- **Can be used vertically or horizontally**
- **Self-contained hydraulic unit**
- **Accurately calibrated**
- **Heavy duty construction**
- **Furnished in permanent instrument case**
- **Three sizes — 10M — 50M — 100M lbs.**

Write for prices.

Studebaker MACHINE COMPANY
1235 S. 9th Avenue • Maywood, Ill.

If you write maker identify as IEN - 8189

HALLOWELL'S New "640" Series

3 BASIC MODELS for your convenience

***UNIT* work benches**

Multiple Unit design enables you to *custom build* HALLOWELL Unit Work Benches to fit your requirements. Standardized construction permits individual or continuous bench installations . . . provides interchangeability with existing HALLOWELL Work Benches of similar dimensions. Ample storage space encourages good housekeeping. Write for literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Pennsylvania.

sps

HALLOWELL SHOP EQUIPMENT DIVISION JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 8190

2 PNEUMATIC CLASSIFIERS IN 1 COMPACT UNIT

- LESS MATERIAL HANDLING COST
- GREATER YIELD OF FINES

Here's a more effective means of separating finely ground materials according to particle size. Coarse material is reclassified before being discharged, and this *Refractionation* reclaims an additional 10 to 15% of the fines.

PRATER *Twin Cone* FRACTIONATOR

Prater Closed Circuit Grinding and Fractionating System . . . designed to pulverize and classify in one continuous operation.

SEND FOR NEW BULLETIN

PRATER PULVERIZER CO.

1536 S. 55th Court Chicago 50, Ill.

If you write maker identify as IEN - 8191

DISCRIMINATING ENGINEERS USE Grafo

COLLOIDAL GRAPHITE for DEPENDABLE LUBRICATION

THERE IS NO BETTER LUBRICANT—NO SUBSTITUTE for Grafo

A dispersion of Grafo colloidal graphite in petroleum, oil, water, castor oil, or other vehicle to meet your requirement is available.

Reduce friction, extend lubrication cycles, increase production with Grafo lubricants.

PERFORMANCE PROVED

On industrial applications such as Hot and Cold Forging, Drawing, Stamping, Steam Cylinders, Wire Drawing, Metal Extrusion, Impregnation, Parting Compounds, Die Casting—All Rubbing and Sliding Surfaces—High or Low Temperatures.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

299 WILKES PLACE

SHARON, PENNSYLVANIA

If you write maker identify as IEN - 8192

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

NO. 5 AIR MODEL

FIVE-IN-ONE-TOOL — ALSO LARGER MODELS

Hand Operated Models Available

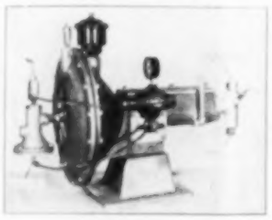
IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60P, MICH.

If you write maker identify as IEN - 8193

PUMP . . Diaphragm and piston to feed chemicals, boost pressures

Source: VAPOR HEATING CORP. 4503 W. 16th St., Chicago 23, Ill.



Type MSM 5001

Operating pressure employing air, gas, steam or water is applied with a reciprocating control on a diaphragm at one end of this new Texsteam reciprocating pump. A 50-lb. pressure on the diaphragm will produce a maximum of 20,000-lb. discharge pressure when a ¼-in. piston is employed at the high pressure end. The pump can be adjusted for inlet pressure at 5 to 50 lb. for delivery of ½ pint to 350 gal. per 24-hr. interval.

Applications include injection of chromates and rust inhibitors into high pressure oil and gas lines, chemical handling, booster service for hydraulic presses, pressure testing of valves, castings, pressure vessels, pipe installations. The pump weighs 62 lb. and is supplied with ¼ or ½-in. Stellite pistons and valves when used for sustained high pressures. For lower pressures the assembly includes a 1-in. stainless steel piston and valves.

The mechanical parts operate in oil and are sealed against the entrance of dust or moisture. The suction side of the high pressure pump is equipped with a combination sight feed strainer and cut-off. The discharge chamber is arranged for priming and to take off a sample.

If you write maker identify as IEN - 8194

PLASTIC . . Phenolic compound molds in thin sections around inserts

Source: DUREZ PLASTICS & CHEMICALS INC. 6 Walck Road, North Tonawanda, N. Y.

Has excellent impact strength

Durez 11780 Black is a new flexible type of phenolic molding compound characterized by its low modulus of elasticity and its ability to absorb shock due to its synthetic-rubber filler. The material molds by compression or in closed molds. It can be preformed in standard equipment.

Molding temperature is between 280 and 310 deg. F. Preheating is handled in a manner similar to general-purpose phenolic materials. Surface finish is good. Flexural strength is 10,000 lb. per sq. in. with tensile strength at 6,000 lb., both minimum. Impact strength is about 50 per cent higher than average for general-purpose phenolic materials. Molded parts can be used in applications where the parts are not subject to more than 250 deg. F.

If you write maker identify as IEN - 8195

SWITCH . . Foot operated design, two normally opened 10 amp. circuits

Source: PEIRCE WIRE RECORDER CORP. 1326-30 Sherman Ave., Evanston, Ill.

Feet prevent skidding

The top plate on this new double-circuit switch is pivoted at its center to ride above two single-pole single-throw normally open switches. Each rates 10 amp. at 110-volt ac. Depressing the pedal on either side closes the circuit on that side and holds it closed as long as the pedal is depressed. Construction is in zinc die castings for the pedal and base with overall dimensions at 5½ by 4⅝ by 2 inches. Assembly weight is 2¾ pounds. A 6-ft. extension cord and end fitting are standard equipment.

If you write maker identify as IEN - 8196

CONNECTOR . . Terminal block to set up circuits for experiment

Source: CURTIS DEVELOPMENT & MFG. CO. 3264-68 N. 33rd St., Milwaukee 16, Wis.

Feed-thru design

Metal channel forms the base for this new Type-FTB experimental terminal block. Into it is set a desired number of terminal assemblies from 1 to 16. Each is separately insulated and held permanently in the strip to present a solder or screw connection on one side and a socket to receive a banana plug on the other. The plugs are not furnished. Terminal rating is 300 volts between units of opposite polarity and to ground. Current carrying capacity of the new unit is 20 amperes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 8197

SELF-LUBRICATING Powdered Bronze Bearings To Your Designs

DUCTILOY powdered-bronze bearings are serving by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

Use is indicated wherever it is desired to provide bearings that will require virtually no lubrication or service attention—bearings accurate within thousandths, ready to drop or press into position—bearings for radial load or thrust or both, to intricate design if necessary.

May we quote to your prints

There's no obligation

NATIONAL MOLDED PRODUCTS, INC.

Manufacturers of

SINTRLOY - DUCTILOY - TUBELOY BEARINGS

1945 Mill Street St. Mary's, Pa.

If you write maker identify as IEN - 8198

Check These 10 Advantages in TRENT *Oil Heater Elements*

1. Underwriters' approved.
2. Rated 3 to 16 K. W.
3. Voltage 115-550 — 3 Phase.
4. Low Watt Density
5. Minimum Carbonization.
6. Low Maintenance.
7. Designed for 300 lb. pressure.
8. Heavy duty terminals and terminal box.
9. Extra heavy flange or screw thread.
10. Temperature range up to 600° F.

ABOVE: HAUCK ELECTRIC OIL PREHEATER, Hauck Mfg. Co., Brooklyn, N. Y. Heat source is TRENT Fin Tube Heating Element.

LEFT: TRENT Fin Tube Heating Element for flange instead of threaded connection. Also made in plain tube and blade styles.

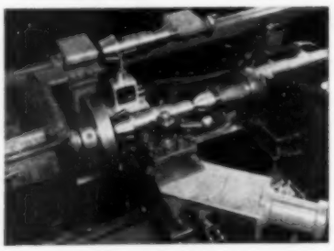
TRENT INC

Electrically Heated Industrial Equipment

247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as IEN - 8199

TURCHAN QUALITY CONTROL



Shop converts 1 lathe, then 10 more to hydraulic duplicating . . . . . .

A prominent manufacturer* of earth moving equipment now using Turchan Follower Attachments saves up to 80% in costs! Need for special form tools is eliminated. Set-up time is greatly reduced. Closer accuracies (to .001") avoid rejects. The Turchan unit replaces the conventional cross slide and operates at a 45° angle to the work axis. Hydraulically controlled cutting tools take uninterrupted cuts over work such as motor shafts, spindles, valve stems, back shafts, piston rods, axles — in fact, any shaft regardless of length, number of steps, tapers and radii. There are Turchan Follower attachments for converting lathes, milling machines, planers, shapers, and grinders. Whatever the job — you can "Turn to Turchan to cut costs!"

*Name on request

Write for Information, Catalog, and Estimate

Turchan FOLLOWER MACHINE COMPANY

6359 LIVERNOIS AVENUE DETROIT 4, MICH.

Oldest Mfr. of Hydraulic Duplicating Attachments for Machine Tools

If you write maker identify as IEN - 8200

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS · OILS · POWDERS · PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 Pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as "1/4%". Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

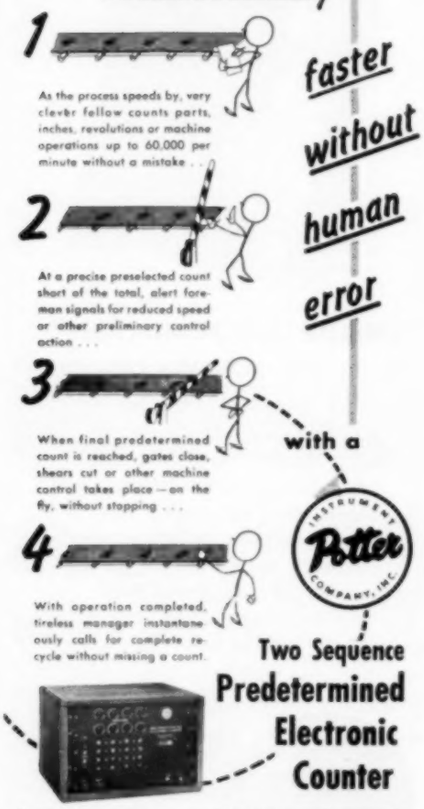
Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 196 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

If you write maker identify as IEN - 8201

YOU CAN DO THIS *automatically*



Two Sequence Predetermined Electronic Counter

Potter instruments are working for manufacturers in every industry—controlling everything from the number of zips in a zipper to the number of pills in a bottle. Potter counters can solve your problem if high speed and precise control are needed. No more flexible method of preselecting one, two or more counts in sequence exists. There are no moving parts, therefore wear, slippage and inertial effects are eliminated. Have you a counting problem? We'd like to help.

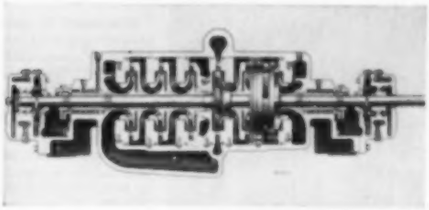
WRITE FOR DESCRIPTIVE CATALOG

POTTER INSTRUMENT CO., INC.
120 CUTTER MILL ROAD
GREAT NECK, NEW YORK

If you write maker identify as IEN - 8203

PUMP . . Multi-stage centrifugal, 1½ to 3 in., pressure to 800 pounds

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. NR, New York 4, N. Y.



Designed for general industrial use

Unit assembly of shaft, impellers, volute channel rings and metal step-seal channel sealing rings applies as a unit inside the horizontally-split smooth-bore housing of this new multi-stage pump. It is known as Class CNTA and is available in four sizes between 1½ and 3 in. with 4, 6 or 8 stages for capacities from 50 to 700 gpm. on pressures from 100 to 800 lb. and temperature to 450 deg. F.

The impellers are positioned to hydraulically balance each other. The seal rings prevent interstage leakage with their metal-to-metal fit inside the housing and the fact that they are automatically placed under correct compression when the housing halves are bolted together. They are resistant to corrosion and are unaffected by high temperature.

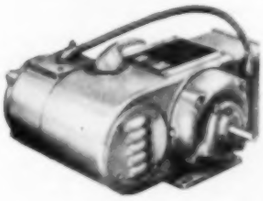
The shaft is carried in ball bearings in housings equipped with oil reservoirs and ring type oilers. Stuffing boxes can be packed solid, arranged for injection or circulation, or equipped with the company's Cameron shaft seal for liquids difficult to handle. Water-cooled stuffing boxes are standard on pumps with steel housings and can be specified in cast iron.

A four-stage pump of 1½-in. size in ball-bearing design measures about 47 in. in overall length. A 3-in. 6-stage assembly measures about 68 inches. The base width in the same two sizes is about 28 and 34 inches. Face-to-face dimension between inlet and discharge is 23 and 32 inches.

If you write maker identify as IEN - 8204

DRIVE . . Variable speed unit, ac. motor and V-belt transmission

Source: U. S. ELECTRICAL MOTORS INC.
202 E. Slauson Ave., Los Angeles 54, Calif.



Ask for Bulletin 1601

Type VA-C is a new assembly in the company's Varidrive line. It is made in ¼, ⅓, ½ and ¾ hp. assemblies of single-phase ac. motor and V-belt transmission. Turning a control dial on the housing varies the output speed in a 10 to 1 ratio within an overall range from 4 to 10,000 rpm. The motor can be connected to a 110 or 220-volt ac. line.

If you write maker identify as IEN - 8205

TESTING . . Electronic titrator for quantitative work, moisture tests

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

No chance for error

Titrimeter designates laboratory equipment initially developed in 1937 and now improved in design of the stand, the stirrer, the electronic eye detector, and the operating controls.

The stand firmly supports the burettes and sample beaker in close assembly with the magnetic stirrer, the electrodes and the electronic tube end-point indicator or detector. The stirring drive motor is mounted on a swivel head under the beaker and the submerged stirring magnet. It provides clockwise movement of the solution to sweep the entering reagent toward the sensitive electrode and provide a preliminary blinking action of the electronic eye to warn the operator of the approach of an end point.

Motor speed can be set over a considerable range. A switch stops the action when the stirrer is swung outward. It restarts when it and a new sample are returned to operating position.

Means are provided to amplify the electric potential picked up at the electrodes, to detect changes through the end point indicator and to set the instrument to make special Karl Fischer determinations. A complete Karl Fischer apparatus can be added for moisture determinations in analyzing organic liquids, inorganic solids, dehydrated foods, cellulose, honey, sugar, wax, polishes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8206

ONE

DE WALT

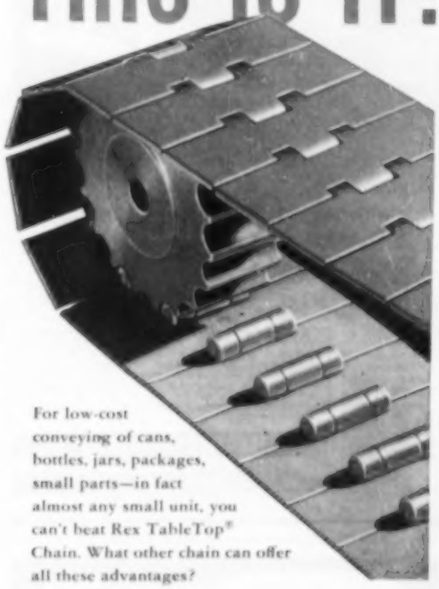
is A COMPLETE power shop

A De Walt is a complete power shop in one machine. It saws at any angle, it dadoes, routs, shapes, tenons, grinds, sands, drills, and even does light metal cutting. For one small investment, in money and in floor space, you get the equivalent of a warehouse full of cutting equipment. Write for catalogue to De Walt Inc., Dept. E-7, Lancaster, Pa.

DE WALT
POWER SAWS
De Walt Inc., Lancaster, Penna. Subsidiary of American Machine & Foundry Co., New York

If you write maker identify as IEN - 8207

THIS IS IT!



For low-cost conveying of cans, bottles, jars, packages, small parts—in fact almost any small unit, you can't beat Rex TableTop® Chain. What other chain can offer all these advantages?

1. Simple as a door hinge—only two parts—link and pin.
2. Smooth transfer—short opening between links—will not catch and trip containers—slides freely under blocked containers.
3. Easy to clean—no pockets to catch foreign matter and encourage bacteria.
4. Easy to couple and detach—fits into existing tracks.
5. Unique sprocket and hinge joint mean wider bearing area . . . longer chain life.

Compare TableTop with other types of conveying methods. We feel sure you'll agree that TableTop is the low-cost, long-life, efficient way to handle it. Our bulletin 51-60 contains all the details on this great chain. Send for it today. Chain Belt Company, 4675 West Greenfield Ave., Milwaukee 1, Wisconsin.

CHAIN BELT REX COMPANY

Chain Belt COMPANY OF MILWAUKEE

Atlanta • Baltimore • Birmingham • Boston • Buffalo • Chicago Cincinnati • Cleveland • Dallas • Denver • Detroit • El Paso • Houston Indianapolis • Jacksonville • Kansas City • Los Angeles • Louisville Midland, Texas • Milwaukee • Minneapolis • New York • Philadelphia Pittsburgh • Portland, Oregon • Springfield, Mass. • St. Louis Salt Lake City • San Francisco • Seattle • Tulsa • Worcester

If you write maker identify as IEN-8209

Coil HANDLING at a Saving of TIME and LABOR

SABIN BARREL TRUCK

FOR HANDLING COILS OF STRIP OR WIRE, BOX STRAPPING, WHEELS, TIRES, LATHE CHUCKS OR FACE PLATES, in fact anything with a hole through it.

As truck is moved up to article, the arm passes through the hole. Then an easy pull back on handle picks up the load. Follower wheel minimizes truck ng effort.

WRITE FOR BULLETIN ON FULL LINE OF BARREL AND DRUM TRUCKS.

THE SABIN MACHINE CO.
6540 Carnegie Ave. Cleveland 3, Ohio
Manufacturers of Many Types of ONE-MAN HAND TRUCKS

If you write maker identify as IEN-8210

NEWCOMER CARBIDE Specialists will gladly show you how to

WITH THE NEW GRADE S-6 CUTTING CARBIDE

Highlights of the NEW S-6

Write today for Catalog No. 109 which shows all other standard grades of Newcomer Carbides.

S-6 Carbide is new and different . . . industry proven on machining. Always place rough steel bargings and castings. Even though S-6 Carbide can be used at high machining speeds, its greatest cost line is obtained at speeds slower than those at which other grades of carbide can be successfully used. S-6 Carbide makes deeper cuts against it can be set for heavier feeds. S-6 Carbide, because of its extremely high strength, is excellent for interrupted cuts.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN-8211

GET YOUR COPY
of FREE booklet
on latest methods of
Abrasive Belt Machining

46 factual examples
show how
ABRASIVE BELT GRINDING
will do all this for you:
- Slash Costs
- Improve Finish
- Greatly Increase Production
- Minimize Dimensional Distortion
- Grind to Precision Tolerances

Send today for your Free copy of this 32-page fact-packed booklet. Tells all about this modern machining method—Abrasive Belt Grinding . . . 46 actual case histories of time and money saved . . . more than 100 illustrations. Yours for the asking.

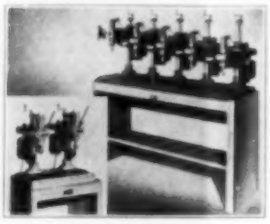
MAIL TODAY!

PORTER-CABLE MACHINE CO.
6107 N. Salina St., Syracuse 5, N. Y.
Please send me your free booklet on Abrasive Belt Grinding.
Name
Title
Firm
Address
City State

If you write maker identify as IEN-8212

DRILLING . . Sensitive machine in gang assembly, 0.004 to 5/16 inch

Source: HAMILTON TOOL CO.
905 Hanover St., Hamilton, Ohio



Each to specification

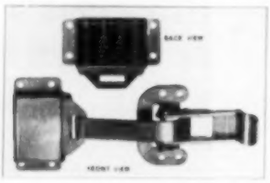
Illustrated is new gang assembly for the company's precision sensitive drilling machine, previously described IEN-7826-40. The individual spindles, each in its own complete motor driven assembly, have capacity from 0.004 to 5/16 in. in hole diameter. Chuck center to the column face measures 8 in. and maximum distance table to chuck measures 14 inches. Speed range is between 840 and 9,300 rpm.

The ball-bearing spindle has a feed movement of 2½ in. and is fitted with a Jacobs 5/16-in. chuck. A depth feed gage limits the spindle travel. A crank operated screw moves the head up and down on its column.

If you write maker identify as IEN-8213

FASTENING . . Toggle type latch locks over center in holding position

Source: BASSICK CO.
439 Howard Ave., Bridgeport 2, Conn.

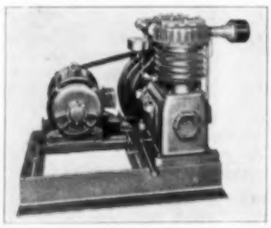


Four springs are assembled in the striker portion of this new latch to set up and maintain control pressure when the toggle mechanism is engaged and pulled into locking position. By holding the pressure steady the springs prevent the latch from opening due to vibration or rough handling. They do not interfere with opening or closing by operation of the toggle lever. The parts are made of steel and can be corrosion proofed or finished as required.

If you write maker identify as IEN-8214

COMPRESSOR . . Two stage air cooled, rates to 108 cfm. at 125 pounds

Source: CURTIS PNEUMATIC MACHINERY DIVISION
1903-7 Kienlen Ave., St. Louis 20, Mo.



For V-belt drive

Disc valves of cushioned angular design and a four section intercooler characterize the construction of this new air compressor. It combines a 7½ by 5-in. low-pressure cylinder and a 4¼ by 5-in. high-pressure cylinder for displacement of 108 cfm. at 125 lb. with a 20-hp motor. The low-pressure cylinder is made of aluminum. The assembly is available with a motor as shown in the illustration when it is specified.

If you write maker identify as IEN-8215

HANDLING . . Plastic container molded in one piece of Fiberglas

Source: MACDERMID INC.
100 Huntingdon Ave., Waterbury 20, Conn.

$60 to $385

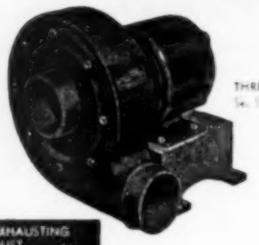
New stocks of Laminex plastic impregnated Fiberglas tanks are now available from the company's warehouses in Waterbury, Conn., and Detroit, Mich. The tank is particularly suited for use in chemical finishing operations as in plating. It is resistant to chemical attack both inside and outside. It is non-conductive and can withstand freezing as well as boiling temperatures. The walls are reinforced with vertical ribs. The top rail is made of 1-in. pipe over which the Fiberglas is molded.

Eleven sizes range from 20 by 16 in., measured inside at the bottom, to 72 by 48 inches. Depth is 18 to 36 inches. Liquid capacity is 25 to 535 gallons. Weight is 20 to 215 pounds. Each tank measures 2 in. greater in width and length at the top than at the bottom. Dam overflows can be included to specification at $1.50 per foot. Outlet holes add 60 cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-8216

THE Sutton MOTOR DRIVEN PRESSURE BLOWER



THREE SIZES ½, ¾, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

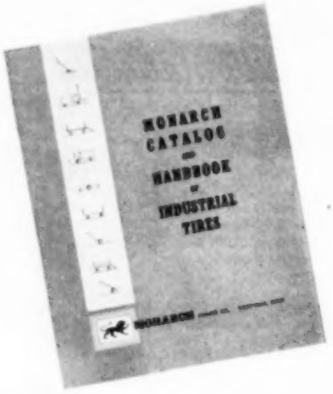
CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY. CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

Write for LITERATURE AND PRICES

Sutton Manufacturing Corp
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN-8217



"INSIDE INFORMATION"
on the NEW MONARCH CATALOG

NEED A COPY?

Wherever hand or motor powered industrial vehicles are at work there is a need for the valuable facts and figures within this catalog. Just send your name and title on your company's letterhead to The Monarch Rubber Company, 100 Lincoln Park, Hartville, Ohio, and your copy will be on its way.

Your best source for replacement tires is the manufacturer of your vehicles, who can supply you, through his distributors, with Monarch Tires engineered for your application.

THE MONARCH RUBBER COMPANY
201 LINCOLN PARK, HARTVILLE, OHIO
DETROIT OFFICE: 7-255 GENERAL MOTORS BLDG.

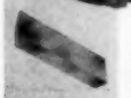
SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

If you write maker identify as IEN - 8219

Faster, HEAVY DUTY Milling on STEEL and CAST IRON

SOLID BLADE "KF" KENNAMILL

THE CUTTER WITH AN ASSEMBLY THAT CAN'T "FREEZE!"



Solid advance-able Kennametal blades are securely supported, can be precision set.

One-piece wedge and screw is tightened with Allenut—no threads in cutter body.

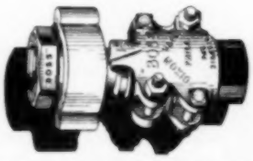
The "KF" Face Kennamill features long-lasting, solid Kennametal blades securely locked into position by easily-accessible stud-type, heat-treated alloy steel wedges that can be pulled up without movement of blades, and released without prying. Freeze-proof—no threads in body! Blades and wedges are interchangeable—fit any slot in this precision-built cutter.

Suitable for faster, lower cost production milling on steel, and heavy duty milling on cast iron. For complete particulars, write for Catalog 51—Supplement 2.

KENNAMETAL Inc.
Latrobe, Pa.
MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

If you write maker identify as IEN - 8220

"BOSS"



WASHER TYPE FEMALE COUPLING STYLE W-16

For leakproof, durable connections on hose for every service—steam, air, gas, water, oil butane, hydraulics—high or low pressure. Furnished with super-strong "Boss" Offset and Interlocking Clamps. All parts (except washer) steel or malleable iron, rustproofed. Deep corrugations on stem smoothly rounded to prevent damage to hose tube. Sizes ¼" to 6", inclusive.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 8221

Widen the Range of your Plant Cleaning

2 NEW Sizes! HOFFCO-VAC Heavy-Duty, Portable VACUUM CLEANERS

Bigger Capacity and Higher Vacuum for Cleaning Larger Areas of Walls, Floors and Overhead Surfaces at Lower Cost!

Hoffco-Vac 15 Operates 35-foot length of hose.

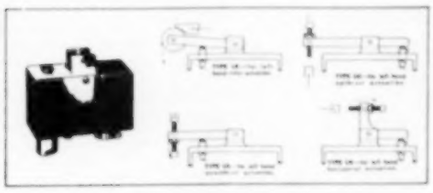
Hoffco-Vac 30 Operates 50-foot length of hose.

AIR APPLIANCE DIVISION
U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

If you write maker identify as IEN - 8222

SWITCH . . Time delay unit actuates circuit to a solenoid valve

Source: PNEU-TROL DEVICES INC.
1438 N. Keating Ave., Chicago 51, Ill.



For automatic equipment control

Several mechanisms now are available to operate the company's Pneu-Trol time-delay switch previously described IEN-5891-51. The mechanisms include linkage for right or left-hand down thrust, up thrust or horizontal thrust actuation. They apply interchangeably on the switch housing. As in the previous design, the housing measures 3⅛ by 1⅝ by 2⅝ inches. Contact rating is 10 amp. on 110-volt ac. for single-pole double-throw operation.

Installation is on a machine so the switch button is depressed a little before the machine movement reaches a limit stop. Depressing the button compresses a spring that works against a piston in an oil-filled dash pot. Coil-controlled movement of this piston permits a lever to operat a sensitive switch enclosed in the housing. Switch position is altered by an adjusting screw in the bottom of the housing to set a desired interval within the overall range.

Changing the oil in the dash pot to various viscosities also provides variation in the dwell ratio. Time-delay adjustments can be made in a 20 to 1 ratio in the overall time-delay range between 0.25 and 60 seconds.

If you write maker identify as IEN - 8223

DRIVE . .Centrifugal brake to prevent equipment from speeding

Source: ST. ANTHONY MACHINE PRODUCTS CO.
2426 E. Franklin Ave., Dept. KP-1, Minneapolis 6, Minn.

List is $60

Aluminum segments faced with a molded lining present a braking surface of about 27 sq. in. inside the aluminum-magnesium finned housing of this new centrifugal brake. The segments move outward by centrifugal action to provide a gradual retarding effect that is operative in a range between 1800 and 4,000 rpm. The brake is designed for shaft mounting but can be supplied for special installation requirements. Overall diameter of the housing is 18 inches. Overall height with a floor type mounting is about 11½ inches. Width is about 2¾ inches.

If you write maker identify as IEN - 8224

TRUCK . . Crawler fork lift particularly for yard duty, 1 to 3 ton

Source: AMERICAN TRACTOR CORP.
196-200 Terra St., Churubusco, Ind.

Works in any weather

Terra-Lift is a new crawler type fork lift truck for operation both indoors and outside. It is particularly suited for yard operations to handle scrap and materials into and out of storage. Attachments permit application also as a bulldozer, loader, snow plow. Three sizes rate 1, 2 and 3 ton. Lift heights are to 6, 8½ and 12 feet.

Overall dimensions with 33-in. forks are 11 ft. in length, 56 in. in width, 78 in. in lowered height. Ground pressure with 7½-in. shoes is 5.2 lb. per sq. in. for the 1-ton assembly. Drive is by a Continental 4-cylinder gasoline engine operating at a governed speed of 1,850 rpm.

If you write maker identify as IEN - 8225

MANAGEMENT . . Instruction booklet to set up standard operating data for turret lathes

E. A. Cyrol & Co.
120 S. LaSalle St., Dept. IEN, Chicago 3, Ill.

New instruction book, "Standard Data for Turret Lathes and Hand Screw Machines", presents illustrated information on methods to set up basic data covering operation of this specific type of machine tool. The data then apply in setting standards for production, costs and worker payment covering any jobs likely to be handled by the machines. List price is $1 for the 113-page book.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 55

If you write maker identify as IEN - 8226

KUSHION-TORQ
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that causes wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.

Send for Bulletin No. 28-N.

Kanti-Lever Couplings

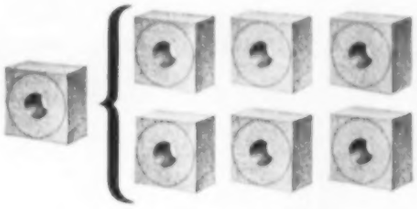
4,000,000 h.p. in Use

MFRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3rd ST. READING, PENNA.

If you write maker identify as IEN - 8227

B&W KAOCAST
Last 3 to 6 times longer



Used for burner blocks, B&W Kaocast stayed on the job 3 to 6 times as long as previous refractory...and this 3000F refractory castable is still going strong.

Kaocast is versatile, too...eliminates need for inventory of special shapes. It can be molded quickly by you, when you need it, directly in place or applied by cement gun. Put B&W Kaocast to work in your plant. Get all the facts from your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

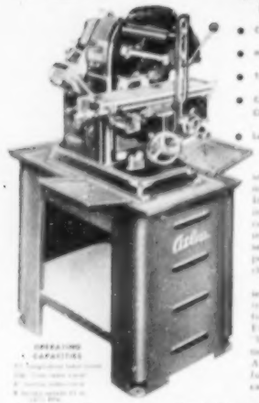
If you write maker identify as IEN - 8228

SOLD ONLY THROUGH RECOGNIZED WHOLESALERS
made by **OKONITE**

If you write maker identify as IEN - 8229

MORE EFFICIENT MILLING
OF SMALL PRECISION PARTS

Atlas
MILLING MACHINE



- Complete V-belt drive
- Handles full range of milling operations
- Timken bearing equipped
- Choice of manual, Production lever, or Change-O-Matic power feed
- Lowest cost miller on the market

YOU PUT the milling of small precision parts on a maximum efficiency basis with the Atlas. It performs the full range of milling — from slabbing and facing contoured milling keyways, boring, and layout work — with the same exacting precision and dependability of large expensive machines . . . *at lower cost*.

It saves many hours monthly in set-ups, saves on power and operating costs — frees bigger machines for jobs that only they can handle. Every feature of larger machines "built down to size" make this the outstanding low-cost miller. Your Atlas distributor will gladly supply full details, or write for complete catalog.

ATLAS PRESS COMPANY
1777 N. PITCHER STREET, KALAMAZOO, MICHIGAN

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN - 8230

20 Ways To Handle *Special* Loads

Free Bulletin on Attachments for E-P Fork Trucks

This profusely illustrated bulletin summarizes Elwell-Parker's 45 years' experience solving *unusual* materials handling problems. Often the peculiar shape or nature of a load requires a specially designed truck or attachment. Elwell-Parker has pioneered in this field. If your handling is "different", send for this bulletin *NOW*. . . Without obligation, you can also ask for expert advice from an E-P man as to whether you need a standard Elwell-Parker or a specially "tailored" truck.

THE ELWELL-PARKER ELECTRIC COMPANY
4063 St. Clair Avenue • Cleveland 3, Ohio

If you write maker identify as IEN - 8231

HOW TUTHILL HELPS YOU
Fit the Pump to the Need...
Not the Need to the Pump!

The Tuthill line of positive displacement internal gear rotary pumps is so flexible that you can find just the pump to fit your need for lubrication, coolant, hydraulic service and liquid transfer. There are mechanically sealed pumps—automatic reversing models—pumps with internal by-pass feature—and stripped models that can be built directly into the design of your equipment. So why attempt to fit the need to the pump?

The new Tuthill Pump Guide provides a quick reference chart to help select the right oil pump for your job.

WRITE FOR YOUR COPY TODAY!

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

If you write maker identify as IEN - 8232

HANDLING . . Caster mounted table holds materials for feed to a machine

Source: JARKE MFG. CO.
5405-9 N. Broadway, Chicago 40, Ill.

List is $247

The steel top of this new Steelmobile portable table measures 20 in. in width by 8 ft. in length. It is flanged down for rigidity at one side and the two ends. On the opposite side is a 6-in. standing flange. The top is mounted in tubular supports so it can be tilted between horizontal and a 45-deg. angle to present a flat top surface or to form a trough as desired.

The uprights are adjustable in the vertical tubular members in the base into which they telescope so the top can be set in any position between 32 and 42 in. above the floor. The base rides on casters with 5-in. wheels. All four are swivel design.

If you write maker identify as IEN - 8233

STERILIZING . . Ultraviolet lamp destroys germs in a room or air duct

Source: COOPER HEWITT ELECTRIC CO.
722 Grand St., Hoboken, N. J.

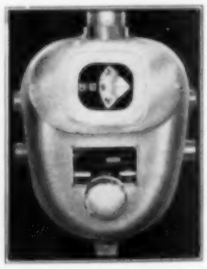
Certain death to airborne germs

Arc length is 18 in. and overall length is 21 in. for this new high intensity ultraviolet germicidal lamp. It is rated at 1,500 watts, considerably greater than previous lamps of this type in the company's line. It is intended for use in air ducts and areas where a large amount of germ-killing power is required. It operates on 220-volt ac. with input at 7.2 amperes. Guaranteed life is 1,000 hours, rated life is 2,500 hours.

If you write maker identify as IEN - 8234

GAGE . . Reads liquid level in low pressure tanks to 70 ft. height

Source: VAPOR RECOVERY SYSTEMS CO.
2818-22 N. Alameda St., Compton, Calif.



Adjusts for gravity

Figure 2500 is a new liquid level gage to mount on a low pressure storage tank for readings that indicate liquid level in the tank. The unit can be applied in new installations or on existing float operated tank gages employing ½-in. tape sheaves. It reads feet on counter-type wheels, inches and fractions on a dial beside the counter.

Mechanism includes a Negator spring type drive that maintains predetermined constant tape tension and eliminates need for the usual counterweight. The gage mounts at any convenient position on the side or top of the tank.

If you write maker identify as IEN - 8235

HANDLING . . Canvas basket regains shape after being flattened

Source: W. T. LANE & BROS. INC.
652 Prospect St., Poughkeepsie, N. Y.

Withstands tough service

Six sizes are available in a new line of canvas baskets with a reinforcing metal frame of unique construction. The frame is designed and assembled with the canvas so the basket can be flattened and then will regain its original shape. The smallest size measures 17 in. in top diameter by 13 in. in depth. The largest one measures 23 by 26 inches. Capacity ranges from 1 to 3 bushels.

Construction includes a double canvas bottom, leather bound rim, reinforced canvas handles, tapered sides for nesting when empty. The sides will not snag. The basket is dust tight and light in weight. It can be used to handle loose materials, work in process, tools, utility supplies. It can be carried or transported on a truck.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8236

THE FLORLINE MARKING MACHINE
Makes Safety & Parking Lines At Walking Speed!

Often pays for itself on the first job! 1 man alone can do the floor marking in 1 day that previously took an entire crew.

- Makes curved, straight, continuous or skip lines . . . 2, 3, or 4 inches wide with interchangeable carriages.
- Holds 1½ gals. paint, lacquer, whitewash . . . cannot spill.
- No motor, compressor or attachments.
- One man, one hand operation.
- Portable, efficient, speedy.
- Operates on gravity feed.
- Easy to clean and store.

$97.50
F.O.B. Detroit
Fully Guaranteed.

H. C. SWEET CO.
12083 Woodbine Avenue Detroit 28, Michigan

If you write maker identify as IEN - 8237

6 REASONS WHY
SHERARDUCT
RIGID STEEL
CONDUIT
is better

Write for our catalog. National Electric Products Corp.
1332 Chamber of Commerce Building, Pittsburgh 19, Pa.

National Electric Products

EVERYTHING IN WIRING POINTS TO

PLANTS IN
AMBRIDGE, PA. • TORRANCE, CALIF.
ELIZABETH, N. J.

If you write maker identify as IEN - 8239

C-D-F makes all three!

Round . . square . . rectangular

low cost SPIRAL TUBING

C-D-F, experts in insulation, makes spiral tubing by the mile . . . has eleven grades, prompt deliveries, good prices. Spiral Tubing is stiff, sturdy, crush resistant. Impregnated or plain. Perfect for coil bodies, structural spacers, even paint rollers!

All these shapes may be easily punched and fabricated by you or by C-D-F. *Write for samples, case histories of cost savings, complete mechanical and electrical specifications. Get the facts . . . write now!*

Continental-Diamond Fibre Company

NEWARK 21, DELAWARE

If you write maker identify as IEN - 8240

F&P Bull's Eye Indicators

NOW

STANDARDIZED AND STOCKED FOR PROMPT DELIVERY

Selection of FLOWRATOR Meters and other F&P flow-rate instruments simplified

Standardization of F&P indicating instruments permits quantity manufacture, lower costs, and quicker deliveries.

You can now select flow meters from catalog data to meet your immediate requirements. Engineering charges and manufacturing delays are eliminated.

WRITE FOR NEW "STOCK FLOW METER" BULLETIN

Contains complete data, sizes, and prices with illustrations of F&P instruments now stocked. It lists all F&P sales engineering offices showing which offices carry stock meters.

PROCESS CONTROL INSTRUMENTS

RATOSIGHT Flow Indicators

"C-CLAMP" FLOWRATOR Meters

ORI-FLOWRATOR high-capacity by-pass meters

MAGNASIGHT Flow Indicators

FISCHER & PORTER CO.

1970 County Line Road

HATBORO, PENNSYLVANIA, U. S. A.

Laboratory Flow Test Kits

FLOWRATOR accurate flow measurement meters

If you write maker identify as IEN - 8242

CONSTRUCTION . . Earth drill for 2 to 10 inch holes to 300 feet

Source: MOBILE DRILLING INC. 958-62 N. Pennsylvania, Dept. IE, Indianapolis 4, Ind.

$5,000 with a 1 ton truck

Type B-36 is a new assembly of power take-off rotary drive head, a vertical guide structure and a hydraulic feed cylinder designed to mount on a 1-ton or larger truck. The feed cylinder also is driven by the power take-off from the truck engine. It is capable of exerting about 4 ton of feed pressure. The cylinder and drilling head ride inside the upright structure for an overall height of 10 ft. during transportation from one location to another. The cylinder raises for an overall height of 16 ft. where it provides 6 ft. of feed movement.

The equipment can be employed in wet or dry drilling and also for percussion drilling to cut through shale, hardpan, sand and gravel, clay and soft sandstone. An adapter is available to position the drilling operation horizontally as well as vertically. Average rate is about 1 foot per minute. Depth capacity in dry operation is 150 feet. This can be increased to 300 ft. with rotary drilling and use of water.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

"I WISH I HAD"

(Continued from page 116)

SURPLUS . . "I wish I had a buyer for my surplus stock of 1,000 high pressure 12½-lb. Kidde carbon-dioxide cylinders Coded ICC-3A-2015. They are in their original cases in Havertown, Penna." IEN W-71

SURPLUS . . "I wish we had a buyer for all or a part of some 550,000 circular steel blanks ranging from a little over 1 in. to 4⅝ in. in diameter and in 13 to 9-gage hot-rolled deep-draw steel. A list and samples will be mailed on request. The stock is in Staten Island, N. Y." IEN W-72

SURPLUS . . "I wish we had a buyer for approximately 300 lb. of bronze powder in storage at St. Paul, Minn." IEN W-73

SURPLUS . . "I wish we had a buyer for 80 pieces of ⅝-in. chain 6 ft. in length and for 140 pieces of $\frac{5}{16}$-in. chain also 6 ft. in length with a grab hook at one end. The chain is in stock in Streator, Ill." IEN W-74

If you write maker identify as IEN - 8243

helpful HYDRAULIC PRESS catalog

75 STANDARD MODELS

Keep it in your machine tool file. Hannifin Standardized Hydraulic Presses Catalog contains complete descriptions and specifications on Hannifin Forcing Presses, Straightening Presses, Column-Type Presses. Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

do ALL you CAN do . . . with

HANNIFIN

Air Cylinders • Hydraulic Cylinders • Hydraulic Presses
Pneumatic Presses • Hydraulic Rivetors • Air Control Valves

If you write maker identify as IEN - 8244

Introducing VALVAIR'S NEW *Spring-Centered* NEUTRAL VALVES

STOP FAST . . . HOLD

Double-acting Air Cylinders in *ANY POSITION!*

Valvair's new spring centered neutral valve is for air, hydraulic or vacuum service; for pressures up to 300 p. s. i. Sizes: ¼" through 1". Control assembly can be knob, lever, treadle, cylinder or solenoid.

Write for Bulletin KQ-S.

VALVAIR CORPORATION, 949 Beardsley Ave., Akron 11, O.

Affiliate: Sinclair-Collins Valve Company

Rely Upon Valvair

If you write maker identify as IEN - 8245

Here is the pair for clean, dry air . .

JOHNSON AFTERCOOLER

Used where moisture is vaporized by the heat of compression. Circulates cooling water around the line, condenses the oil and water vapor so Separator can remove them. Simple in design, highly efficient in performance.

SIZES FOR ALL NEEDS

JOHNSON SEPARATOR

Removes more than 99% of all water, dirt and oil from compressed air or steam. Combines the two best principles of separation—first allows air to expand slightly, then changes flow direction with the "Thousand Baffles". Model illustrated is the newest idea in separator design, with self-draining trap mechanism built right in.

WRITE FOR BULLETIN

The Johnson Corporation

846 Wood Street, Three Rivers, Mich.

If you write maker identify as IEN - 8246

A STONHARD Floor Can Really Take It!

It could be as much as 30 years old and still be doing a good job! When you install STONHARD Materials you won't need to use them again as maintenance materials for years to come. Apply STONHARD RESURFACER right over the existing rot or entire surface. At only one-half inch it bonds securely and tapers to a feather-edge, providing a resilient, non-skid, fire-resistant surface that becomes even more compact with continued service. Find out today, about this longer-range investment.

STONHARD COMPANY

Building Maintenance Materials Since 1922

102 Stonhard Building, 1306 Spring Garden Street, Philadelphia 23, Pa.

Please send me your RESURFACER Folder: 102-7-52

Name .....

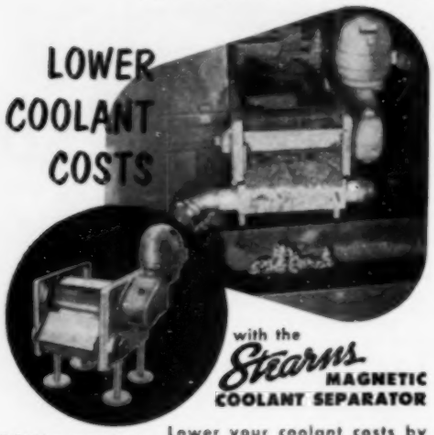
Company ..... Title .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN - 8247

LOWER COOLANT COSTS



with the Stearns MAGNETIC COOLANT SEPARATOR

- Positive separation
- Dewatered sludge
- Compact, simple to install
- Automatic, continuous operation

Lower your coolant costs by cleaning your coolant and re-using it. Remove the swarf and sludge magnetically — with a Stearns separator EXPERIENCE ENGINEERED for your operation.

Foremost in the Magnetic Field

Stearns MAGNETIC INC.

626 SOUTH 28TH STREET • MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 8248

"The boss is getting smart. He telephoned Alvey-Ferguson in Cincinnati today about engineering a conveying system for our plant."

For Engineered Conveying Systems

THE ALVEY-FERGUSON COMPANY

Since 1901

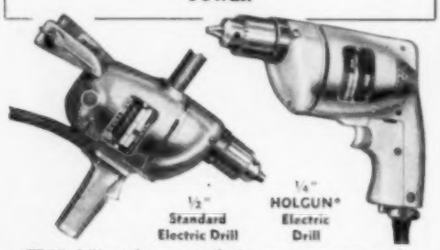
342 Disney Street CINCINNATI 9, OHIO

Representatives in Principal Cities

If you write maker identify as IEN - 8249

DRILLING PROBLEM?

Switch to BLACK & DECKER POWER



½" Standard Electric Drill

¼" HOLGUN* Electric Drill

FOR drills to fit your needs, it pays to see your nearby Black & Decker Distributor *first!* You get an unmatched choice of Drill models — capacities from ¼" to 1¼" — choice of handle arrangement — choice of speed, power and price in most capacities. And you get powerful Black & Decker-built motors, full ball-bearing construction, extra-tough parts, husky housings, perfect balance. Write for free catalog to: The Black & Decker Mfg. Co., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

*Trade Mark Reg. U. S. Pat. Off.

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

NEW PRODUCT . . "I wish I had a manufacturer interested in taking over production and sales of my patented motion producing mechanism for wood-working machines. It is a mechanism for application particularly upon a router or like machine to shift a wood panel or similar work in a desired path beneath a rotary cutter or bit to produce a design or opening of a desired shape." **IEN W-66**

SURPLUS . . "I wish we had a buyer for about 3,000 steel plates measuring 8 in. in diameter by ¼ in. in thickness with a 3⅜-in. center hole. There is also a ring of six ⅜-in. threaded holes on a 6-in. bolt circle. Niagara Falls, N. Y." **IEN W-67**

SURPLUS . . "I wish we had a buyer for all or part of our surplus stock of high-speed-steel straight-shank drills with a center oil hole. They measure 1 1/16 in. in diameter. They are made by Chicago Latrobe and Standard Drill Company. We hold about 900 in stock in Landisville, Penna." **IEN W-68**

SURPLUS . . "I wish we had a buyer for all or a part of a stock of 25,000 electric-tin-plated steel springs. They stand ¾ in. in free height, develop a load of about 35 lb. at 5/16 inch. There are four turns with one turn at each end flat and ground. Outside diameter is about 11/16 inch. Inside diameter is about 1½ inch. We also have 45,000 plated steel washers to apply at the ends of the springs. They are 1/32 in. in thickness and the same inside and outside diameter as the spring. The stock is in Zelienople, Penna." **IEN W-69**

PLASTIC . . "I wish we had a source of supply for acrylic cast rod from ⅛ to ⅜ in. in diameter and also for acrylic tubing measuring ⅛ to 1½ in. in outside diameter. We have written to many possible sources of supply but have been unable to find one with which we can do business as yet. We are located in Buffalo, N. Y." **IEN W-70**

(Please turn to page 115)

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 8250

DeBothezat "Hy-V" Air Jets project a concentrated stream of cool air as far as 35 feet WITHOUT DUCTS. Models available for wall or floor mounting, with fan wheels 18" to 30" in diameter. Capacities up to 12,000 CFM. Send today for FREE CATALOG.

"Hy-V" Air Jets

DeBOTHEZAT FANS DIVISION

American Machine and Metals, Inc.

East Moline, Illinois

If you write maker identify as IEN - 8251

Simple — Accurate —

WEIR METERS

for Waste Measurement

● Float-and-cable Weir Meters developed by Foxboro offer simple, accurate measurement of liquid flow. Widely used in sewage, chemical processes, and industrial waste disposal.

The Foxboro Weir Meter is extremely simple. Operates through motion of float to measure head through V-notch, rectangular or Cippoletti weirs—or Parshall flumes. Motion is transmitted by cable to accurate recording or integrating mechanisms. Direct-reading, uniform flow scale—copper or plastic-covered floats.

Write for detailed information. **The Foxboro Company, 427 Neponset Ave., Foxboro, Mass., U. S. A.** Also Montreal, Canada. Branches in principal cities.

FOXBORO WEIR METERS

Reg. U. S. Pat. Off.

If you write maker identify as IEN - 8252

say B&W before you say WELDED Boiler Tubes ...for 5-star satisfaction*

- quality
- dependability
- economy
- uniformity
- long service

When you specify B&W Electric-Resistance-Welded Boiler Tubes, you get 5-Star Satisfaction that goes beyond code requirements—plus values derived from metallurgically controlled materials, manufacturing precision, verified uniformity and meticulous inspection for perfection. Find out from Mr. Tubes—your B&W representative—or your local distributor what B&W 5-Star Satisfaction can mean to you, or write for information on B&W ERW Boiler Tubes.

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
General Offices & Plants
Beaver Falls, Pa. — Seamless Tubing, Welded Stainless Steel Tubing
Alliance, Ohio — Welded Carbon Steel Tubing

B&W SEAMLESS and WELDED TUBES

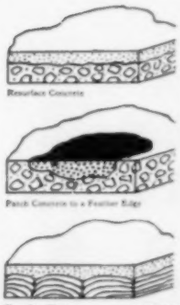
If you write maker identify as IEN - 8253

NEW FLOORS In 24 Hours

HARD MASTIC

BONDS PERFECTLY—NEVER COMES LOOSE

3000 lbs. pressure per square inch will not rut



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FIRE-RESISTANT • RESTFUL • QUIET
SLIP PROOF • SANITARY

Install right over your old floors, walks and drives. No need to remove machinery—finish right up to it. No chipping. No dust. No delay. Install Friday night and Saturday, ready for use on Monday. Never a failure in over 1,000 installations.

Our Contract Department can do the installation work for you at any rate to 30,000 sq. ft. per day.

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